

REFERENCE

UH
215
L746H
1945

BOOK0000003478



ARMED FORCES MEDICAL LIBRARY

HISTORY OF AEROMEDICAL
EVACUATION IN THE
PACIFIC THEATER
DURING WORLD
WAR II

JOINT MEDICAL LIBRARY
Forrestal Bldg. Rm 6E-040

NATIONAL LIBRARY OF MEDICINE
Bethesda, Maryland



FORRESTAL BUILDING
WASHINGTON, D. C. 20314

OTSC FORM 367
1 SEP 66

GPO 881-754

GPO 878194

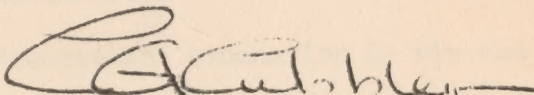
Library
Office of The Surgeon General
U.S.A.F.

FOREWORD

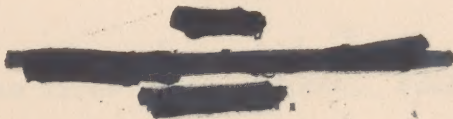
This material has been extracted from the history of the Pacific Operations during World War II by Dr. Mae M. Link, Chief of the Historical Branch, Surgeon General's Office, Headquarters USAF.

It is felt that the solution to many of the Aeromedical Evacuation problems we are presently faced with may be contained in the extracted material. The historical data was not too well disseminated at the time of its original preparation and submission and, with the advent of demobilization, the personnel who had actively participated in solving the problems of unit organization, equipment, and procedures that arose during the Pacific operations reverted to civilian life too quickly to allow their experiences to be translated into regulations, etc. While solutions to the problems are theoretically lost as a result, the wealth of background information contained in the following pages may allow for their reconstruction.

This lost information and background has been extracted for the benefit of those individuals who are concerned with developing the organization and operating procedures of the USAF Aeromedical Evacuation System.



C. A. CUBBLER
Major, USAF (MSC)
Chief, Org & Mob Planning Branch
Medical Service-Plans Division
Office of The Surgeon General



JOINT MEDICAL LIBRARY
Forrestal Bldg. Rm 6E-040



WITHDRAWN FROM COLLECTION

FOREWORD

This material has been extracted from the history of the United States Army, Volume II, by Dr. H. H. Hall, Chief of the Historical Branch, Surgeon General's Office, Washington, D.C.

It is to be noted that the relation to that of the American Revolution is not a simple one. The historical data are not so well distinguished at the time of its original preparation and revision, with the intent of describing the progress of the war, as they are in the present. The historical data are not so well distinguished at the time of its original preparation and revision, with the intent of describing the progress of the war, as they are in the present. The historical data are not so well distinguished at the time of its original preparation and revision, with the intent of describing the progress of the war, as they are in the present.

This last information and background has been extracted from the history of the United States Army, Volume II, by Dr. H. H. Hall, Chief of the Historical Branch, Surgeon General's Office, Washington, D.C.

[Signature]
H. H. Hall
Chief, Historical Branch
Surgeon General's Office
Washington, D.C.

~~SECRET~~

UNITED STATES GOVERNMENT

UH
215
US8h
1945

CHAPTER XIV

AIR EVACUATION

During the Pacific War air evacuation gradually attained a position of utmost importance in the care of sick and wounded personnel. (Photo 231.) The intra-theater evacuation of almost 25,000 patients during a 3 year period is ample proof of the important role it plays in the victory over Japan.¹ This new and previous untried procedure presented many problems to interested personnel of all arms and services in the South and Southwest Pacific Theaters. Even though there was a shortage of personnel and equipment in the Pacific Theaters, the full potentialities of air evacuation were not realized with the troops and facilities at hand. The problems of direction, coordination, and organization which were essential for successful operation were not fully appreciated by all commanders concerned and the necessary steps to correct deficiencies were not always taken. With the proper employment of air evacuation, double the number of patients probably could have been handled.

This report covers only intra-theater evacuation by air and does not include the inter-theater evacuation conducted by ATC.

HISTORY OF AIR EVACUATION:

Air Evacuation in both the theaters started as an emergency measure and, despite its haphazard and relatively undirected operations during this period, provided for the evacuation of patients who could not have been

1. Statistics from the files of the Surgeon, FEAF.

removed from the combat area by any other means. The history of air evacuation during the entire war in these theaters, as recorded in official documents and personal records, was one of continuous effort on the part of interested personnel to obtain organization and recognition.

SOUTH PACIFIC THEATER: The first use of large-scale evacuation of sick and wounded by the United States Forces during World War II occurred at Guadalcanal in August and September 1942.² The Troops who invaded this island on 7 August 1942 were soon cut off from water-borne sources of supply by superior Japanese Naval Forces. The two Marine and one Army troop Carrier Squadrons of the South Pacific Combat Air Transport Service (SCAT) that brought in all supplies received by these isolated troops undoubtedly contributed greatly to the success of the original landing. The possibility of using these unarmed and unescorted planes which were returning empty to their bases for evacuating sick and wounded personnel was quickly realized and soon became an established practice. It was not until one month after this procedure was started that the service was placed on an organized basis and Marine Corpsmen assigned to each plane. At the beginning of the year the advance echelon of the first Air Evacuation Squadron to be sent overseas was assigned to SCAT. (Photo 232). The remainder of the 801st Medical Air Evacuation Squadron arrived in the theater late in February 1943 and a Medical section of SCAT was formed in

2. Report Hq 801st Medical Air Evacuation Squadron from the Commanding Officer to the Surgeon Thirteenth Air Force, subj: "Report of Activities," 26 September 1943. (Annex p. 483-/,

March to supervise air evacuation in the theater. Prior to this date approximately 7,000 patients had been evacuated by air from Guadalcanal. Up to June 1944, 27,500 were evacuated from the battle fields in the Solomons and Admiralties.

The 801st Medical Air Evacuation Squadron constituted almost three-fourths of the total flying personnel assigned to SCAT Medical. At this time the Air Evacuation Squadron, and Army Air Force unit was assigned to the Service of Supply for administration and to SCAT, a Marine unit for operations. In June 1943 the unit was assigned to the Thirteenth Air Force for administrative control. The Medical Officer in charge of SCAT Medical and a Navy Flight Surgeon whose primary duty and interest was the medical section of the Marine Air Group to which he was assigned. All policies reference air evacuation were established by the Navy and Marines without coordination with the Army, Air Force, or the Air Evacuation Squadron that was specifically organized for such duties. The officer in charge of SCAT Medical was in complete control of all assigned personnel.^{3,4} The Commanding Officer of the Air Evacuation Squadron was unable to schedule his personnel for evacuation flights, or assign them to forward bases, and, in some instances, was directed as to which of his personnel should or should not be placed on flying duty. Marine and Navy personnel were placed in charge of all air evacuation bases even when senior Army Air Force Flight Surgeons with more experience were assigned to the same base. Patients were often assigned to Navy Corpsmen _____

3. Report Hq 801st Medical Air Evacuation Squadron from the Commanding Officer to the Surgeon Thirteenth Air Force, sub: "Report of Activities," 26 September 1943. (Annex p. 483.)

4. Report Hq Thirteenth Air Force Surgeon, Thirteenth Air Force to Air Surgeon, AAF, sub: None. (9 April 1943).

by these officers in preference to more highly trained AAF Flight Nurses. (Photo 233).⁵ These practices continued until the reassignment of the Thirteenth Air Force to FEAF in June 1944. For these reasons the organization of SCAT Medical was unsatisfactory to the Army and Air Force personnel concerned.

During these 15 months, little was achieved to smooth out the organization of air evacuation in the South Pacific. Efforts to coordinate all interested agencies though supported by the Army Headquarters produced few tangible results. Information on future operations was unobtainable which made it impossible to accomplish efficient planning of air evacuation for their support. No coordinate use of Navy controlled hospital ships and air evacuation planes was achieved. In many instances ships were used to evacuate patients from Guadalcanal when more rapid evacuation by plane was available. The command personnel of SCAT considered air evacuation to be a relatively minor part of their over-all objective.⁶ Frequently insufficient planes were sent forward to accomplish the evacuation required and on only one occasion were planes dispatched for the specific purpose of evacuating patients. Patients were given extremely low priority; litter

5. Report Hq 801st Medical Air Evacuating Squadron from R. E. Amster, Capt., MC. to Lt Col F.D. Mohle, MC, Sub: "Report 29 January 1944 and Report February 3, 1944, Headquarters XIII Air Force Service Command, Office of the Surgeon, " 9 February 1944. (Annex p. 491.)

6. Report Hq 801st Medical Air Evacuation Squadron Quarterly Report of Historical Data, 1 September to 30 September 1944.

cases were third, urgent sitting cases were fourth, and all others were seventh. On one occasion only 29 of 152 scheduled patients were evacuated to the rear because of the higher priority of other personnel and cargo.⁷ Communications for air evacuation were practically non-existent necessitating the placing of medical personnel aboard all planes going to forward areas on the chance that some patients might be picked up at that location. In August 1944, Flight Nurses made 107 flights averaging ten to twelve hours for each flight, yet only received patients on 37 of these trips. Holding Stations were conspicuous in their absence in spite of repeated requests for their establishment and hospitals were located without regard to the proximity of air fields. As a result many patients suffered exposure to the elements and enemy fire while waiting for planes whose arrival was uncertain until shortly before they landed. Many patients had to be returned over rough roads to their distant hospital of origin when they were put off planes because of their low priority. For a long time Flight Nurses were not allowed to fly into or stay overnight in combat areas and their professional training was wasted on a few patients evacuated in the rear areas who required no medical attendance whatsoever. (Photo 234). No effort was made to educate theater medical officers in the requirements and advantages of air evacuation. These officers could not be blamed for their disinclination to use this method of evacuation in view of the lack of dependability which resulted from

7. Report Hq 801st Medical Air Evacuation Squadron from R. K. Amster, Capt., MC, to Lt Col F. D. Mohle, M.C, Sub: "Report 29 January 1944 and Report February 3, 1944 Headquarters XIII Air Force Service Command, Office of the Surgeon," 9 February 1944. (Annex p. 491).

the above factors. Moreover, the officers from the Air Evacuation Squadron themselves were completely dissatisfied with the situation as it existed in this theater. 8,9,10,11,12

Southwest Pacific Theater: As in the South Pacific, Air Evacuation in the Southwest Pacific began as a matter of necessity. Troops in the Buna Campaign were almost as completely shut off from their source of supplies as were those at Guadalcanal. RAAF and USAAF transport planes (DH-84's and C-47's) used in supply these troops were soon used to evacuate patients on the return trip. (Photo 235). Once again no organization for this service existed and many inadequacies were noted. 13,14

-
8. Report Hq 801st Medical Air Evacuation Squadron from the Commanding Officer to the Surgeon Thirteenth Air Force, Sub: "Report of the Activities," 26 September 1943. (Annex p. 483).
 9. Letter Hq 820th Medical Air Evacuation Squadron from the Commanding Officer to the Air Surgeon AAF, Sub: "Control of Air Evacuation," 6 November 1944. (Annex p. 495).
 10. Report Hq 801st Medical Air Evacuation Squadron, Sub: "Historical Data," 31 December 1943.
 11. Report Hq 801st Medical Air Evacuation Squadron, Sub: "Annual Report," 31 December 1943.
 12. Report Hq 801st Medical Air Evacuation Squadron, Sub: "Quarterly Historical Report of Medical Activities," 1 October 1944.
 13. Report of f/Lt F. W. Kiel, Medical Officer of No. 36 Squadron RAAF, December 1942. Annex p. 475.
 14. Report Hq U. S. Advanced Base, Office of the Surgeon by M. N. Steinberg, Capt., MC, Sub: "Evacuation of Patients by Air," 1942, (Annex p. 470).

However, in the course of 70 days, approximately 13,000 patients were safely evacuated over the 7,000 foot pass in the Owen-Stanley Range to Port Moresby in a few minutes instead of the long hazardous journey by foot. (Photo 236). No medical personnel accompanied these planes and a lack of coordination between interested agencies was apparent at both the embarkation and debarkation points of the flight. (Photo 237). The first directive on air evacuation was issued on 14 October 1942 by the Headquarters Allied Land Forces, SWPA.¹⁵ This directive pointed out the necessity for proper organization and coordination but failed to outline any method by which this would be accomplished. In a report on this operation in late 1942, a RAAF medical officer who took part pointed out the lessons which should be learned from this experience and submitted a suggested directive on the subject of air evacuation for approval by GHQ,¹⁶ In this report this officer pointed out the necessity for close cooperation between all interested agencies; long-range planning for future operations; proper organization of air evacuation, including trained pilots and flying personnel; an efficient system of property exchange; and the establishment of holding stations and Air Evacuation Bases. It was pointed out that a number of patients undoubtedly died as a result of the absence of the above considerations.

15. Memorandum Hq Allied Land Forces, SWPA, Advanced Headquarters, Sub: "Air Evacuation of Casualties," 14 October 1942. (Annex p. 446).

16. Report of F/Lt. F. W. Kiel, Medical Officers of No. 36 Squadron RAAF, December 1942. (Annex p. 475).

The rapid delivery of patients to hospitals for definitive treatment and the improved morale of troops who were cognizant of this smooth and rapid service were important aspects of air evacuation. An example of the time saved by using planes instead of ships is given below:

	<u>Distance</u>	<u>Time by Plane</u>	<u>Time by Ship</u>
Buna to Port Moresby	90 miles	45 minutes	4 days (by foot)
Port Moresby to Townsville	680 miles	4½ hours	2 days
Guadalcanal to Santos	600 miles	4-4½ hours	2-3 days
Guadalcanal to New Caledonia	950 miles	6-7½ hours	4-5 days
New Georgia to Guadalcanal	280 miles	1½ hours	1 days 17,18

However, the most important factor in air evacuation, particularly in the Buna and Guadalcanal Campaigns, was the rapid removal of non-effectives from the combat zone. The resulting reduction in logistical requirements of troops in the forward areas and the fewer hospital beds which needed to be maintained greatly relieved already over burdened and extended supply lines.

Practically no action was taken during the remainder of 1942 and first half of 1943 to improve the operation of air evacuation in the S/PA, possible because of the lull in operational activity and the reduction in

-
17. Report: Hq Thirteenth Air Force Surgeon, Thirteenth Air Force to Air Surgeon, AAF, Sub: None, 9 April 1943.
 18. Report: Hq Fifth Air Force Surgeon, Fifth Air Force to Air Surgeon, AAF, Sub: "Medical Department Activities of Fifth Air Force 1942".

the number of patients evacuated by air when it was no longer an absolute transport necessity. The 804th Medical Air Evacuation Squadron arrived in the theater in September 1943 and was assigned to USASOS despite the request of the Commanding General, Fifth Air Force, that this Air Force units, which was to operate solely with other Air Force Units, be assigned to his command.¹⁹ It was not until late October that the unitless nurses were assigned to the Fifth Air Force. The nurses were eventually reassigned to their unit on the 24th of December 1943.^{20,20a} The Commanding General, Advance Echelon ADVON, Fifth Air Force, requested the assignment of the 804th MATS to the Headquarters ADVON Fifth Air Force as it was felt that a greater flexibility of operations would be achieved in this manner. This request was disapproved and, as planned, the unit was assigned to the 54th Troop Carrier Wing as were all other air evacuation units which arrived in the theater at a later date.²¹

-
- 19. Memo Hq Fifth Air Force from the Surgeon to the Chief of Staff, Sub: "Assignment of Medical Squadron, " 19 July 1943. Annex p. 500.
 - 20. Report Hq 804th Medical Air Evacuation Squadron, Sub: "Quarterly History of Medical Activities," 1 January 1944.
 - 20a. Report Hq 804th Medical Air Evacuation Squadron, Sub: "Quarterly History of Medical Activities (Fourth Quarter 1943)," 10 March 1944.
 - 21. Letter Hq ADVON Fifth Air Force from the Deputy Air Force Commander to the Commanding General Fifth Air Force, Sub: "Re-assignment of 804th Medical Air Evacuation Transportation Squadron," 9 March 1944. (Annex p. 501).

At the time of the arrival of the 804th MAES a directive was issued by the Commanding General, Advanced Section, USASOS, delineating the policy which was to govern the function of the Air Evacuation Squadron with respect to other Medical Department installations. ²² This memorandum directed the Commanding General of each base to supply the Air Evacuation Flight Surgeon at the base with a daily roster of patients requiring air evacuation and in addition to provide strip side shelters and necessary transportation to meet incoming planes. (Photos 237 and 238). The Flight Surgeon was responsible for approving all patients designated for air evacuation. In addition he was to provide the personnel to operate the strip side shelter, notify hospitals as to the time of arrival and departure of planes, maintain property exchange and furnish daily rosters of the patients evacuated. Though complete as far as it went this directive failed to provide for: liaison between air evacuation units and theater medical sections; planning for future operations, and air evacuation communications. All of these items had been found to be necessary for the successful accomplishment of the air evacuation mission.

Upon request in October 1943, the Commanding Officer of the 804th MAES rendered a complete report on the requirements of air evacuation

22. Memorandum Hq Advanced Section USASOS, Sub: "Medical Air Evacuation," 30 September 1943. (Annex p. 448).

and submitted suggestions as to the best method of solving the difficulties that existed prior to this time.²³ The need for proper organization and coordination was again stressed but the situation remained relatively unchanged. The Surgeon for the 54th Troop Carrier Wing was made responsible for the "central control supervision and operation" of the Air Evacuation Squadron.²⁴ This officer was untrained in Air Evacuation and was hardly in a position to effect proper coordination between CHQ, USASOS, and Air Force Headquarters and the Air Evacuation Squadrons. The Fifth Air Force was made the responsible headquarters for "the planning and execution of transportation of patients by air" and "coordination with the USASOS of movement of patients by air." However, USASOS did not coordinate fully with the Fifth Air Force for the evacuation of patients by air and required coordination was not accomplished.^{25,26,27,28,28a} Despite

-
- 23. Report Hq 504th Medical Air Evacuation Squadron, Sub: "Air Evacuation of Casualties," 1943. Annex p. 494.
 - 24. Letter Hq 504th Medical Air Evacuation Squadron to the Deputy Air Force Commander to the Commanding General Fifth Air Force, Sub: "Request for Authority of T/O for Medical Air Evacuation Transportation Group Headquarters," 30 March 1944. (Annex p. 493)
 - 25. Letter Hq USAFFE from the Commanding General USAFFE to the Commanding Generals Sixth Army, Fifth Air Force, USASOS and 14th AAF Command, Sub: "Air Evacuation," 22 January 1944. (Annex p. 493)
 - 26. Letter Hq USAFFE from the Commanding General USAFFE to the Commanding Generals, Sixth Army, Fifth Air Force, USASOS, and 14th AAF Command, Sub: "Air Evacuation," 22 February 1944.
 - 27. Letter Hq USAFFE from the Commanding General USAFFE to the Commanding Generals, Sixth Army, FEAF, USASOS XIV Corps, 14th AA Command, Sub: "Air Evacuation," 16 July 1944.
 - 28. USASOS Regulation 50-15, Sub: Evacuation, 6 June 1945. (Annex p. 457)
 - 28a. Letter Hq FEAF from CG, FEAF to CG, USAFFE, Sub: "Essential Technical Medical Data from Overseas Air Forces," 1 March 1945, 1st Ind

repeated requests for central control of air evacuation either through an Air Evacuation Group Headquarters or an Air Evacuation Officer in Air Force Headquarters, it was not until June 1945 that an officer was placed on temporary duty in the Office of the Surgeon, PLAF, to coordinate all air evacuation activities. 29,30,31 Even this move met with considerable resistance from within PLAF Headquarters itself.

Throughout the course of the war, many difficulties were encountered by the Air Evacuation Squadrons in the accomplishment of their missions in the S PA. Until late in the war, Medical Officers of other branches³¹ of the service showed a marked aversion to use air evacuation. 32 On one occasion 300 patients were kept waiting four days in inadequate quarters at Owl for hospital ships while planes came in daily and left empty. 32a In this instance the trip by ship required two days whereas the flight by plane required only four hours. Non-Air Force personnel in the higher commands showed a similar unwillingness to utilize air evacuation. The Surgeon, PLAF, was unable to obtain information of projected operations

-
- 29. Letter Hq 4th Air Force from the Deputy Air Force Commander to the Commanding General 5th Air Force, Sub: "Request for Authorization of T/O for Medical Air Evacuation Transportation Group Headquarters," 30 March 1944. (Annex p. 498).
 - 30. Personal Letter Surgeon PLAF to the Air Surgeon AAF, 24 March 1945. (Annex p. 21)
 - 31. Personal Letter Surgeon PLAF to the Air Surgeon, AAF, 22 June 1945. (Annex p. 21)
 - 32. Report Air Surgeon, AAF to Commanding General, AAF, Sub: "Report on Special Mission," 23 November 1944.
 - 32a. Report Hq 804th Medical Air Evacuation Sq., Sub: "Quarterly Report of Medical Activities," 1 July 1944.

on which he could formulate plans for the employment of air evacuation. 33,34 Another source of difficulty lay in the poor communications afforded air evacuation personnel. Other problems arising were: the lack of Holding Stations.³⁵ Flight Nurses in many instances were not permitted to fly into the forward areas: 36,37,38,39 and failure to properly coordinate the use of evacuation ships and planes. 40,41 It should be noted, however, that though these difficulties existed in the SOWA, they were not as distressing as they were in the SOPAC. Conditions

-
- 33. Personal Letter Surgeon FEAF to the Air Surgeon, AEF, 15 Feb 1945.
 - 34. Personal Letter Surgeon FEAF to the Air Surgeon, AEF, 24 March 1945. Annex p. 19).
 - 35. Report Hq 804th Medical Air Evacuation Squadron, Sub: "Quarterly Historical Report of Medical Activities," 1 October 1944.
 - 36. Report Hq 804th Medical Air Evacuation Squadron, Sub: "Quarterly History of Medical Activities (Fourth Quarter 1943)," 10 March 1944.
 - 37. Report Hq 804th Medical Air Evacuation Squadron, Sub: "Quarterly Historical Report of Medical Activities," 31 December 1944.
 - 38. Report Hq 830th Medical Air Evacuation Squadron, Sub: "Quarterly Historical Report of Medical Activities," 31 December 1944.
 - 39. Report Hq 820th Medical Air Evacuation Squadron, Sub: "Quarterly Medical History of Squadron Activities," 31 March 1945.
 - 40. Report Hq 804th Medical Air Evacuation Squadron, Sub: "Quarterly Historical Report of Medical Activities," 31 December 1944.
 - 41. Report Hq 820th Medical Air Evacuation Squadron, Sub: "Quarterly Historical Report of Medical Activities," 31 December 1944.

in the SWPA were much more favorable for the successful growth of air evacuation even though this growth was slow. Personnel of the 54th Troop Carrier Wing considered air evacuation to be a major objective of their over-all mission, second only to the transportation of supplies and personnel to forward areas. As a result, when possible, planes were frequently dispatched for the sole purpose of evacuating patients. Adequate priorities were given to patients being evacuated to the rear in this theater: litter patients being evacuated first, mail was second, sitting patients were third, and other personnel were fourth. (Photo 239). An efficient method of communications was eventually established through cooperation with the 54th Troop Carrier Wing.⁴² Also Holding Stations were eventually set up in sufficient numbers.

In June 1944 the 820th MAES arrived in the theater from the United States and was assigned to the 54th Troop Carrier Wing.⁴³ At the same time the 601st MAES was transferred from the SOPAC and though still assigned to the Thirteenth Air Force was placed under the operational control of the 54th Troop Carrier Wing, a Fifth Air Force unit.⁴⁴ In this manner all Air Force air evacuation activities

42. Report: Lt. Col George F. Baier, III, to Air Surgeon, AAF, Sub: "Medical Report, Fifth Air Force," 27 November 1943.

43. Report Hq 820th Medical Air Evacuation Squadron, Sub: "Quarterly History of Squadron Activities," 15 October 1944.

44. Report Hq 601st Medical Air Evacuation Squadron, Sub: "Quarterly Historical Report of Medical Activities," 1 October 1944.

were centralized, resulting in inter-dependent operations. This organizational set-up remained essentially unchanged until late 1945 when the 801st Air Evacuation Squadron again functioned as a unit of the thirteenth Air Force when evacuating patients from the southern Philippines. During the entire war the Air Evacuation Squadrons assigned to the Southwest Pacific Theater evacuated a total of approximately 170,000.⁴⁵ Approximately 20,000 patients were evacuated by air in this theater prior to the arrival of the 804th MAES in September 1943. All new landings and invasions following the completion of the Papuan Campaign were supported by air evacuation supplied by the Air Evacuation Squadrons. (Photo 240). In addition a small RAAF air evacuation unit was organized and put into operation during the last eight months of the war.

ADMINISTRATION OF AIR EVACUATION SQUADRONS:

In both theaters the first Air Evacuation Squadrons were assigned on arrival in the theater to the Service of Supply. In both instances this assignment of Air Force units to a non-Air Force command proved to be unsatisfactory and limiting the successful operations of these squadrons.^{46,47} In the South Pacific Area the 801st MAES was reassigned

45. Statistics from the files of the Surgeon, FEAF.

46. Report Hq 801st Medical Air Evacuation Squadron from the Commanding Officer to the Surgeon Thirteenth Air Force, Sub: "Report of Activities," 26 September 1943. (Annex p. 483).

47. Report Hq 804th Medical Air Evacuation Squadron, Sub: "Quarterly History of Medical Activities (Fourth Quarter 1943)," 10 March 1944.

after a period of six months to the Thirteenth Air Force Service Command. With the arrival of the 403rd Troop Carrier Group the Air Evacuation Squadron was reassigned and became one of its subordinate squadrons. The 403rd Group was assigned to the Thirteenth Air Force Service Command for administrative control but was under the operational control of MACV which was practically a Marine unit. ⁴⁸ During this period many of the administrative difficulties formerly facing the 801st were alleviated and the operational efficiency somewhat improved. Later this unit was assigned directly to Air Force Headquarters which proved to be the most satisfactory method of control experienced by this unit. In the S. P. A. the air evacuation units were eventually assigned directly to the headquarters of the 54th Troop Carrier Wing, a separate command of the Fifth Air Force, and operated with various troop carrier groups assigned to the Wing. Inasmuch as the 54th Troop Carrier Wing came under the control of the Fifth Air Force, the movement of these units and their operations were frequently directed from these higher headquarters rather than from the 54th Troop Carrier Wing.

In both theaters an exceptional interest in the units themselves was taken by personnel in higher Air Force Headquarters who closely supervised and controlled their movement and activities. In a number of instances air evacuation units were situated close to or in Air Force

48. Report Hq 801st Medical Air Evacuation Squadron, Sub:
 "Quarterly Historical Report of Medical Activities,"
 1 October 1944.

Headquarters when their location in more forward areas had been recommended. On several occasions the nurses of these units were quartered in Air Force Headquarters apart from the rest of their units.⁴⁹ In one instance trip of 27 miles was required by these nurses to reach the airdrome from which troop carrier planes were operating.⁵⁰ Operations were hampered by restrictions with regard to the areas in which Flight Nurses could fly, even though there was little danger of enemy activity. (Photo 241). On Leyte and subsequently on Luzon, AFCS, Ground Force Nurses, Red Cross personnel and A/C Flight Nurses were employed several weeks before Flight Nurses of the Air Evacuation Squadrons were allowed to land and pick up patients. In one instance, nurses of the 301st MAES in late 1943 were prohibited by higher Air Force authority from flying at night in spite of the fact that patients were embarked only on those planes which arrived in the forward areas at dawn. At times it appeared that the social obligations of these units were of more importance than their tactical employment. In the spring of 1942 in the SOPAC, several nurses who were needed for air evacuation duties were ordered to fly a round trip of 1200 miles over water to attend a dance at another base despite the objections of the Theater Surgeon.⁵¹ Personnel with no experience in air evacuation or medical problems were

49. Report Hq 804th Medical Air Evacuation Squadron, Sub: "Quarterly Historical Report of Medical Activities," 1 October 1944.

50. Report Hq 820th Medical Air Evacuation Squadron, Sub: "Quarterly Medical History of Medical Activities," 31 December 1944.

51. Information obtained from the Commanding Officer 801st Medical Air Evacuation Squadron and the Air Surgeon, AAF.

prone to direct the activities of these squadrons. Such practices seriously hampered the efficient operation of these units and jeopardized the lives of trained personnel unnecessarily. When these units were permitted the freedom of activities usually granted other Air Force units they functioned in an efficient and exemplary manner.

AIR EVACUATION OPERATIONS:

Planning: As noted above, air evacuation operations were hampered by the inability of air evacuation personnel to obtain information on projected operations. 52,53,54,55 Not infrequently a landing would be made and shortly thereafter the Air Evacuation Squadron without any prior notice would be directed to put a system of evacuation into operation from the new base. Such a system required a knowledge of the number of patients anticipated, the base to which they would be evacuated, the location of hospitals and holding stations, the transportation of patients to and from the air field, the operation of an air evacuation section at the new base to coordinate activities, the establishment of an adequate system of communications and coordination

-
52. Report Hq 801st Medical Air Evacuation Squadron from the Commanding Officer to the Surgeon Thirteenth Air Force, Sub: "Report of Activities," 26 September 1943. (Annex P. 483).
 53. Report Hq 804th Medical Air Evacuation Squadron, Sub: "Quarterly Report of Medical Activities," 1 July 1944.
 54. Report Hq 820th Medical Air Evacuation Squadron, Sub: "Quarterly Medical History of Squadron Activities," 31 March 1945.
 55. Personal Letter Surgeon PFAF to the Air Surgeon AAF, 24 March 1945. (Annex P. 19).

with troop carrier units and other air evacuation facilities. Needless to say, the establishment of such a system on short notice was virtually impossible and during the early days of an invasion the resulting service was not satisfactory to either the Ground Forces or this Air Force.

Many requests for clarification of responsibilities were made and suggested standard operating procedures drawn up in an attempt to anticipate these problems in the pre-invasion planning. 56,57,58,59,60,61,62,63,64 Complete liaison of the type desired was never achieved and air evacuation personnel were forced to initiate other means of obtaining the desired results. Personnel of Air Evacuation Squadrons took it upon themselves to learn of new invasions and contact Task Force Surgeons.

-
- 56. Fifth Air Force Regulation No. 25-50, Sub: "Air Evacuation," 28 October 1943. (Annex P. 450).
 - 57. USASOS Technical Memorandum No. 2, Sub: "Air Evacuation," 11 January 1944. (Annex P. 451).
 - 58. Letter Hq ADVON Fifth Air Force from the Surgeon to Commanding Officer ALF, Sub: "SOP for Air Evacuation of Sick and Wounded for Air Liaison," 19 April 1944. (Annex P. 455).
 - 59. Letter Hq 804th Medical Air Evacuation Squadron from the Commanding Officer to the Commanding General, 54th Troop Carrier Wing, Sub: "Suggested Operative Procedure for Air Evacuation in Operational Area," 16 May 1944. (Annex P. 455)
 - 60. FEAF Regulation No. 25-50, Sub: "Air Evacuation," 21 July 1944. (Annex P. 457).
 - 61. Letter Hq Air Evacuation Operations, 801st and 804th Medical Air Evacuation Squadrons, Sub: "Air Evacuation Procedure" 9 October 1944. (Annex P. 460).
 - 62. Letter Hq 54th Troop Carrier Wing to Commanding General FEAF, Sub: "SOP for Air Evacuation," December 1944. (Annex P. 462).
 - 63. Letter Hq 135th Medical Group to Commanding Officers of all Hospitals on M-1 Operation." (Annex P. 466).
 - 64. Operations Memorandum Hq 135th Medical Group, Sub: "Procedure for Air Evacuation," 31 December 1944.

Though it was impossible to make definite commitments as to when, where, and how air evacuation would commence, the employment of air evacuation was discussed in general terms and the requirements for air evacuation pointed out. The details of establishing the date of the projected commencement of air evacuation and the establishment of communications was the responsibility of the liaison party which accompanied the task force. The air liaison party was further responsible for notifying the commanding general of the Fifth Air Force of the number of patients requiring evacuation. 65

This procedure did not prove entirely satisfactory and at Hollandia, Leyte and Mindoro, representatives of the Air Evacuation Squadrons accompanied the Task Force and landed shortly after D-Day. Based on this experience, however, this procedure was abandoned as it was found necessary to wait anywhere from three to four days before the situation became sufficiently stabilized to permit contacting the various persons involved. Moreover, it was almost impossible for air evacuation officers to make any definite commitments as the troop carrier policy for the operation was unknown to them. No definite plans could be made for ground installations until the air strips had been completed and a decision as to which ones were to be used by troop carrier planes had been made. 66 A change in policy was, therefore, made and air evacuation personnel were sent into the new area with the first troop carrier plane.

65. Letter Hq ADVON Fifth Air Force from the Surgeon to Commanding Officer Alp, Sub: "SOP for Air Evacuation of Sick and Wounded for Air Liaison," 19 April 1944. (Annex P. 455).

66. Report Hq 804th Medical Air Evacuation Squadron, Sub: "Quarterly History of Medical Activities," 15 July 1944.

(Photo 242). Considerable time was necessary following this date before efficient air evacuation operations could be put into effect. ⁶⁷

It was felt by all Air Force personnel concerned that liaison between the Ground Forces and the Air Forces prior to an operation would have solved these problems and that more efficient air operation would have been established at an earlier date. It was believed that representation of personnel from the Office of the Theater Surgeon, Task Force Surgeon, Air Evacuation Squadron and Troop Carrier operations would have been necessary to cover all necessary aspects of the plan. ^{68,69} Alternate methods of evacuation were to be chosen should the projected plan for air evacuation fail. Such liaison was finally established in July 1945 with the assignment of an Air Evacuation Office to the staff of the Surgeon, FEAF. ⁷⁰ A complete plan of evacuation was drawn up for the projected invasion of Japan which was felt to be satisfactory for the first time. This plan of evacuation gave the date of D-Day, the target date on which the strip would be ready for use by transport planes, The anticipated casualty rate, the hospitalization available, the evacuation facilities prior to air evacuation, the base to which

68. Report Hq 820th Medical Air Evacuation Squadron, Sub: "Quarterly Report of Squadron Activities," 31 March 1945.

69. Report Hq 804th Medical Air Evacuation Squadron, Sub: "Quarterly Historical Report of Medical Activities," 31 December 1944.

70. Personal Letter Surgeon FEAF to the Air Surgeon AAF, 22 June 1945. (Annex P. 21).

casualties would be evacuated, and the designation of sufficient medical units to function as holding stations. It was planned that following the establishment of air evacuation almost all patients would be evacuated from Japan by this means when possible.

LOCATION OF FIELDS AND STRIP-SIDE FACILITIES: The problem of the location of hospitals and air fields as they affect one another in air evacuation was never satisfactorily solved during the war in these theaters. It was felt by certain Ground Force personnel that air fields to which patients were delivered from forward areas should be located with regard to the location of hospitals. It was the contention of the Air Forces on the other hand that hospitals should be located with regard to projected air field sites. In many instances these two facilities were located far distant from each other and patients were submitted to long rough trips in order to get to and from air fields and hospitals. For the invasion of Japan it was the desire of the Theater Surgeon to have all patients delivered to NaHa on the southern end of Okinawa. This area was to be a main hospital center and was located close to excellent harbor facilities for ship evacuation, as well as to main AIC bases. The concentration of patients in this area had obvious advantages. Further evacuation to the Philippines or to the United States could have been accomplished smoothly and rapidly. However, the Commanding General of the Fifth Air Force had laid plane for the establishment of a troop carrier base in the northern part of the island and requested that hospitals be erected in this area to receive all patients from Japan. In

some instances air fields suitable for transport planes were established near hospitals though relatively few hospitals were specifically located in close proximity to air fields. In New Caledonia the main concentration of hospitals was located 30 miles from the nearest air field.

The necessity for the establishment of holding stations for patients awaiting air evacuation became apparent early in the development of air evacuation in both theaters. (Photos 243, 344). Such facilities were never made available in the SOPAC. ⁷¹ In the SWPA theater, directives as early as October 1943 made the Commanding General, USASOS, responsible for the establishment of strip-side shelters. ⁷² However, it was not until the landing at Hollandia in April 1944 that a hospital was specifically designated for this purpose. ⁷³ Prior to this time, make-shift shelters were constructed and maned by air evacuation personnel. (Photo 237). These shelters rarely fulfilled the requirements, in many instances became necessary for the Air Forces to employ as Holding Stations the Portable Surgical Hospitals assigned to them. These small hospitals were frequently enlarged to many times their authorized bed strength when serving in this capacity. During the

-
- 71. Report Hq 801st Medical Air Evacuation Squadron from the Commanding Officer to the Surgeon Thirteenth Air Force, Sub: "Report of Activities," 26 September 1943. (Annex P. 483).
 - 72. Memorandum Hq Advanced Section USASOS Sub: "Medical Air Evacuation 30 September 1943." (Annex P. 448).
 - 73. Report Hq 820th Medical Air Evacuation Squadron, Sub: "History of Squadron Activities," 15 October 1944.

latter part of the war all personnel appreciated the necessity of establishing Holding Stations at an early date and little difficulty was experienced during the Luzon and Okinawa Campaigns. (Photo 245).⁷⁴ These installations were usually located within one mile of the strip and furnished only temporary medical care to patients awaiting further evacuation. The air evacuation section at these bases was usually located in close proximity to the Holding Stations and were equipped with communication facilities. With this organization it was possible to notify rear areas of the exact number of planes required to evacuate patients on the following day. (Photo 246).

Employment of Air Evacuation During a campaign: Experience in the Pacific War in the SOPAC and SWPA demonstrated that air evacuation could not be expected to be reliable during the early days after a landing. The exact date on which an air strip would be available for transport planes was not always known due to the normal events of war. (Photo 247). For instance, at Bougainville the first air strip to be completed was found to be unsafe for heavy planes until considerable more work had been performed upon it. In some instances, though the seizure of air fields was the main objective of the campaign, these fields were not put into operational use on the date expected because of unexpected enemy resistance. This factor played an important role in the delayed

74. Report Hq FEAF from CG, FEAF to Commander in Chief, AFPAC, Sub: "Report of Essential Technical Medical Data," 31 August 1945.

commencement of air evacuation from Biak. At Munda, New Georgia, the air field was not entirely under control until late in the campaign at which time the majority of casualties occurred at a point too far from the air field to warrant their return over-land and they were evacuated by LST and PBV from nearby beaches. In addition, enemy air opposition was often too great to risk the safety of unarmed and often unescorted transport planes loaded with wounded personnel.

It was found that when fields were seized during the first few days after a landing, transport planes for the purpose of air evacuation reasonably could be expected to commence operations on or about D plus 10 to 14. However, in some instances as in the Leyte Campaign, the tactical situation prevented air evacuation operations even at this date. Here the field had to be closed to transport aircraft for a period of two weeks following the first two days of evacuation on D plus 14. It was not until D plus 30 that regular air evacuation service was put into operation. The consensus of most personnel concerned with the problem of evacuation of wounded from forward areas was that during the earliest part of a campaign reliance should be placed upon other methods of evacuation than air.

Normally air evacuation was able to operate on an almost routine schedule after air superiority had been attained and adequate facilities had been established. Occasional interruptions did occur as the result of weather, or the employment of all available transport planes in other operations of higher priority, (Photo 247). However, these interruptions rarely lasted more than 24 hours and air evacuation,

contrary to the opinion of many Ground Force Medical Officers, could be relied upon to furnish a steady daily means of evacuation. 75

It was felt in these theaters that the employment of air evacuation fell logically into two distinct categories, the initial phase and the routine phase. During the initial phase of air evacuation after the landing, patients of all categories were evacuated to rear bases for more definitive treatment and care. During the early period hospitals of all types in the forward areas were usually ill-equipped to render more than emergency treatment. As a result they usually functioned as evacuation hospitals. Air evacuation proved to be an effective method of reducing the number of patients which had to be cared for at one time by these hospitals. Though it was desirable that certain types of cases should not be evacuated by air, yet in an emergency, all types could be safely handled. Few deaths occurred when trained medical personnel accompanied the patients. All medical personnel were of the opinion that inasmuch as these patients were usually the most serious ones encountered during a campaign every effort should be made to give them the best possible medical care while enroute from the forward area to the hospitals in the rear. (Photo 248).

75. Personal Letter Surgeon FEF to the Air Surgeon AAF, 15 February 1945. (Annex P. 16).

These sections were responsible for those aspects of air evacuation that specifically concerned medical personnel. Close liaison with Troop Carrier and Air Freight Forwarding Units. Small air evacuation section were established at each major forward base. (Photo 250). The air evacuation officer in the forward area was notified daily of the number of patients requiring evacuation on the following day. This information was then relayed to the officer in charge of the main air evacuation base in the rear who then contacted troop carrier operations. The number of planes required at each forward base was given to troop carrier operations and the time of departure of these planes ascertained. Medical personnel were then assigned to these planes by the air evacuation officer who then notified the Air Freight Forwarding Unit to include these personnel on the manifest. As a rule only 24 hours notice was given by hospitals in the forward areas though from the air evacuation viewpoint, 48 hours would have been much more preferable.⁸³ When Holding Stations were available in the forward areas, patients were sent to them the previous afternoon and held overnight to await the arrival of planes the next morning. (Photo 251). The expected time of arrival of the planes was given on the previous evening those forward bases and again one hour prior to landing. In areas where Holding Stations did not exist, hospitals were notified to have patients at the field one-half hour

83. Personal Letter Surgeon FEMF to the Air Surgeon AAF, 15 February 1945. (Annex P. 17).

Operations From A Medical Point of View: Considerable controversy existed among air evacuation personnel as to whether the most efficient method of operations was the establishment of a pool of flying medical personnel in forward areas to meet all situations, or whether it was better to establish the main pool of personnel in rear bases in close association with troop carrier units where they could be called upon when necessary. Due to the restrictions on basing Flight Nurses in forward areas, the latter system was almost universally adopted throughout both theaters. When efficient communications were established this procedure proved to be satisfactory. However, in a number of instances, planes arrived in forward areas without medical personnel that were required for the evacuation of patients. With an almost complete lack of communications in the SOPAC, it was necessary to man each troop carrier plane with medical personnel. As a result many unnecessary hours of flying were accomplished by Flight Surgeons, Flight Nurses and Corpsmen. ⁸² One Flight Nurse was lost and a number of air evacuation personnel were involved in air craft accidents while they were returning from forward areas unaccompanied by patients.

Air Evacuation Squadrons established their control operations sections at main Troop Carrier bases in the rear areas. (Photo 249).

82. Report Hq 801st Medical Air Evacuation Squadron from the Commanding Officer to the Surgeon Thirteenth Air Force, Sub: "Report of Activities," 26 September 1943. (Annex P. 483).

Although Air Evacuation Squadrons were organized to furnish this type of care, they were unable to because the nurses were not permitted to fly into these areas during this phase, and the effectiveness of air evacuation was seriously reduced. 76, 77, 78, 79, 80

The routine phase began with the establishment of efficient air evacuation operations and adequate hospitals in the forward areas. Air evacuation was best employed during this period as means of evacuating to the rear only those patients who required more than the designated period of hospitalization in order to return them to duty. In this way, the mission of air evacuation as defined by War Department Regulations was that of keeping "forward medical installations clear of casualties, allowing for the care of newer casualties and reducing the logistical problem of providing extra supplies and personnel for these forward units."³¹

76. Report Hq 804th Medical Air Evacuation Squadron, Sub: "Quarterly History of Medical Activities (Fourth Quarter 1943)." 10 March 1944.
77. Report Hq 804th Medical Air Evacuation Squadron, Sub: "Quarterly Historical Report of Medical Activities," 31 December 1944.
78. Report Hq 820th Medical Air Evacuation Squadron, Sub: "Quarterly Historical Report of Medical Activities," 31 December 1944.
79. Report 820th Medical Air Evacuation Squadron, Sub: "Quarterly Medical History of Squadron Activities," 31 March 1943.
80. Radio Hq Surgeon Fifth Air Force to the Commanding General 54th Troop Carrier Wing, 15 December 1944. (Annex P, 501)
81. Report Hq 135th Medical Group Section IX, Sub: "Small Plane (L-5) Ambulance Evacuation," March 1945.

prior to the expected time of arrival.

On arrival at the forward base planes to be used for air evacuation were given first priority for the removal of cargo, and the plane set up for the reception of litter cases. The air evacuation personnel on duty in the forward areas and ambulance personnel were used to load the planes. (Photo 233). In most cases air evacuation routes were scheduled to certain major centers of the hospitalization. However, in occasional instances when these centers were overcrowded with patients, planes were redirected to other bases. The air evacuation officers stationed at receiving bases were notified as far in advance as practicable as to the number of litter and litter cases to be expected. They, in turn notified the hospitals to send the required number of ambulances to the air field. (Photo 252). The Air Forces were responsible for the care of patients only from the time of embarkation to the time of debarkation. It was also the duty of the Flight Surgeon in the forward area to check all patients for suitability for evacuation by air.

The above system of operations was that commonly employed in SWPA where relatively efficient communications were established by air evacuation. In the SOPAC where this situation did not exist, air evacuation was based on a much more haphazard system of operations. The number of patients requiring evacuation, the time of arrival at the embarkation, and the location of the base to which these patients were to be evacuated was rarely known until the arrival of planes at the point of embarkation. In many instances all patients requiring evacuation could

not be evacuated due to an insufficient number of planes arriving at that base on that particular day. After arrival in forward areas planes frequently had to wait for hospitals to be notified and patients sent to the field. The administrative difficulties inherent in evacuating a patient from a hospital made it extremely difficult for the hospital to get these patients to the planes in less than one hour.. At points of debarkation, patients were frequently required to wait for considerable periods of time while hospitals were notified of their arrival and ambulances dispatched.^{84,85}

Operations from a Troop Carrier Point of View: In the great majority of instances in the SWPA, troop carrier units considered air evacuation to be their second most important objective, the first being the transportation of troops and supplies to forward areas. Full cooperation was given by them to air evacuation squadrons and frequently planes were dispatched solely for the purpose of evacuating patients. A close coordination and liaison was established between troop carrier units and air evacuation squadrons which resulted in the efficient utilization of planes and personnel. Troop Carrier crews demonstrated a profound respect for the medical personnel on the planes and accepted their advice in matters which concerned the

84. Report Hq 801st Medical Air Evacuation Squadron from the Commanding Officer to the Surgeon Thirteenth Air Force, Sub: "Report of Activities," 26 September 1943. (Annex F. 483).

85. Report Hq 801st Medical Air Evacuation squadron from R. K. Ameter, Capt., MC, to Lt. Col. F. D. Mohle, MC, sub: "Report 29 January 1944 and Report February 3, 1944, Headquarters XIII Air Force Service Command, Office of the Surgeon," 9 February 1944. (Annex P. 491)

welfare of the patient, With the establishment of adequate communications and an efficient air evacuation organization, little extra burden was placed on troop carrier units by air evacuation activities. All matters pertaining to the operation of planes except the destination were controlled by the troop carrier operations. When necessary, medical equipment was flown forward at the request of the air evacuation officer. Some difficulty did occur during the early period of operations through Air Freight Forwarding Units as in some instances these units did not consider air evacuation to be an important factor in their operations. As a result, medical supplies and personnel were occasionally left off the manifest when there was a backlog of cargo awaiting forward shipment. These difficulties were, however, rapidly ironed out and close cooperation was given by these units to air evacuation squadrons during the latter part of the war.

The situation in the SOPAC, however, was entirely different. The personnel in charge of SCAT did not consider air evacuation to be one of their primary objectives. Air evacuation in this theater was essentially a matter of convenience and an activity which was carried on when no other duties were required of the troop carrier units. The low priority granted to patients, the lack of adequate communications, and the failure to supply sufficient planes, seriously hampered the mission of air evacuation in this theater. 86

Communications; Experience in air evacuation in the SOPAC and SWPA during the war pointed out the extremely important role that adequate communications played in the efficient operation of air evacuation. (Photo 253). ⁸⁷ In the SOPAC area, no system of communications between the main air evacuation base of operations and forward areas was set up. The only communications used was that between planes and airdromes approximately an hour and a half prior to the expected time of arrival of the plane. At this time the expected time of arrival was given by the plane as well as the number of litter and sitter patients on board. This message was transmitted in code and received by AACS installations. It was then decoded teletyped to SCAT operations and then telephoned to SCAT Medical. Considerable confusion and error occurred as a result of the many hands through which these messages had to pass. At first no definite code for the use of air evacuation was developed though later a code covering the number of litter and sitter cases was used. Because it was necessary to decode these messages, considerable delay was incurred in the cryptographic section due to the low priority granted this type of message. Many

-
86. Report Hq 801st Medical Air Evacuation Squadron from R. K. Ameter, Capt., MC, to Lt. Col. F. D. Hohle, MC, sub: "Report 29 January 1944 and Report February 3, 1944, Headquarters XIII Air Force Service Command, Office of the Surgeon," (9 February 1944). (Annex P, 491).
87. Memorandum Hq 54th Troop ~~Carrier~~ Wing from Lt. Col D. W. Smith to Lt. Col. A. J. Beck A-3 ~~Advance Echelon~~ Fifth Air Force, Sub: "Suggested Communications Plan for Air Evacuation," 21 April 1944. (Annex P, 520).

instances occurred where the desired information was not received at SCAT Medical until after the arrival of the plane. Similar delays occurred at forward bases in the reception of messages making known the expected arrival of planes to evacuate patients. 88, 89 Permission was eventually received to transmit this information in the clear when the planes were less than one hour away from its destination.

In the SQPA, the necessity for adequate communications was rapidly realized and in January 1944, the Commanding General, USASOS, was made responsible for the establishment of communications to be used in air evacuation. 90 During the first months of operations by the 804th MAES, Sixth Army and Australian Army radio channels were used. 91 However, these channels did not prove to be entirely satisfactory because of the incomplete network of these systems of communications. An attempt was then made to use AACCS channels but difficulties similar to those experienced in the SOPAC presented themselves and this method of communications was abandoned by air evacuation personnel. Subsequently Bomb

88. Report Hq 801st Medical Air Evacuation Squadron from R. K. Ameter, Capt., MC, to Lt. Col. F. F. Mohle, MC, sub: "Report 29 January 1944 and Report February 3, 1944 Headquarters XIII Air Force Service Command, Office of the Surgeon," 9 February 1944. (Annex P. 491)

89. Report Hq 801st Medical Air Evacuation Squadron from the Commanding Officer to the Surgeon Thirteenth Air Force, Sub: "Report of Activities," 26 September 1943. (Annex P. 384).

90. Informal Memo from Surgeon, FEAF to the Air Surgeon, AAF, 18 December 1944. (Annex P. 453).

91. Report Hq 804th Medical Air Evacuation Squadron, Sub: "Quarterly History of Medical Activities," 1 January 1944.

Wing and Fighter Control channels were used with some improvement. In an effort to improve the communications a special portable type of equipment was developed by personnel of the signal companies and attached to the 54th Troop Carrier Wing. Following a field trial at Nadzab this method of communications was used by air evacuation and troop carrier personnel after April 1944. The equipment consisted of SCR-399 and SCR-499 radio sets. (Photo 246). All messages had to be decoded. This equipment accompanied personnel of the 54th Troop Carrier Wing Liaison Party and permitted the rapid establishment of communications facilities after the commencement of operations from new air strips.⁹² This system of communications proved to be entirely satisfactory, but Bombing channels still had to be relied upon in certain instances because of a limitation in equipment and personnel.

At the time of the invasion of Leyte, because of the absence of previous coordination with Pacific Ocean Area Headquarters, the 54th Troop Carrier Wing Signal Team, which was sent to establish a relay station at Pelelieu, was not permitted to operate and reliance had to be placed on AACs channels which again did not prove to be satisfactory.⁹³ On the other hand during the Luzon Campaign an extremely efficient system

92. Memorandum Hq 54th Troop Carrier Wing from Lt. Col. S.S. Smith to Lt. Col. A. J. Beck A-3 Advance Echelon Fifth Air Force, Sub: "Suggested Communications Plan for Air Evacuation," 21 April 1944. (Annex P. 574).

93. Report Hq 804th Medical Air Evacuation Squadron, Sub: "Quarterly Historical Report of Medical Activities," 31 December 1944.

of communications was established by the 3rd Air Command Group and the 135th Medical Group for use in the system of evacuation developed at this time which employed L-5 planes. ⁹⁴ Though this was only a small part of the entire air evacuation operation and was employed only over short distances, it demonstrated the advantages that could be obtained when proper coordination and organization was achieved.

TYPES OF PLANES USED AND THEIR ADAPTABILITY TO AIR EVACUATION:

In emergencies almost all types of planes have been used to evacuate personnel. (Photo 254). Various methods of adapting various types of planes for this purpose were developed in these theaters. C-47 and L-5 planes were the main types of planes used in organized air evacuation. The number of patients that could be carried in the former type and its range made the C-47 extremely satisfactory for use in air evacuation. (Photo 255). The type of C-47 that was used in these theaters during the first part of the war was not equipped with any type of litter bracket and patients had to be placed upon the floor of the cabin. In the SOPAC, because of the vast distances which had to be covered, the patient load was further limited by the installation of fuselage tanks in order to carry extra gasoline. ⁹⁵ During the latter

-
94. Memorandum Hq 54th Troop Carrier Wing from Lt. Col. D. T. Smith to Lt. Col. A. J. Beck, A-3 Advance Echelon, Fifth Air Force, Sub: "Suggested Communications Plan for Air Evacuation," 21 April 1944 (Annex P. 481).
95. Request Headquarters 801st Medical Air Evacuation Squadron from the Commanding Officer to the Surgeon Thirteenth Air Force, Sub: "Report of Activities, 26 September 1943 (Annex P. 483).

part of 1942, 1943 and early part of 1944, the C-47's arriving in the theater were equipped with metal-type brackets. During the last year of the war almost all planes were equipped with web-type brackets which proved to be more satisfactory. Another feature which made the C-47 easily adaptable to air evacuation was the position of the cargo door which permitted easy loading. During the last ten months of the war, a large number of C-46s were assigned to troop carrier units and employed in air evacuation. (Photo 256). A number of C-46s were lost as a result of operational accidents during the early days of their employment in this theater and air evacuation personnel as well as troop carrier crews did not relish flying in this type aircraft. 96 Considerable difficulty was encountered in overcoming this attitude and for a considerable period of time C-47's were employed by air evacuation personnel whenever possible in preference to the C-46. The main advantage of the C-46 was the increased patient load that could be carried. As many as 36 patients could be carried in this type of plane in contrast to a normal load of 26 in the C-47. The number of litter cases that could be carried in the C-47's was 18 with metal brackets and 24 with web brackets. Thirty-three litter patients could be accommodated in the C-46. One difficulty encountered when using C-46's for evacuation was the extreme height of the cargo door above the ground which necessitated either improvised means to load litter patients or the furnishing of all forward areas with

96. Report Hq 820th Medical Air Evacuation Squadron, Sub:
 "Quarterly Medical History of Squadron Activities,"
 31 March 1945.

sufficient mechanical hoists to meet requirements. (Photos 257 and 258) During the period C-46's were employed, air evacuation routes were not of sufficient magnitude as to make the use of this type plane with its longer range preferable to the C-47.

L-5 planes and other similar light planes were used occasionally during the war in the Pacific to evacuate patients from air fields to hospitals and for other intra-island evacuation. (Photos 259 and 260). 97,98 It was not until the inception of the Luzon Campaign that this type of aircraft was used in large scale evacuation of patients. 99 The L-5B which was designed to carry one litter patient, proved to be extremely satisfactory for this purpose. However, it was not until the arrival of the Third Air Commando Group in December 1944 that this type of plane was made available to air evacuation personnel. Prior to the arrival of the L-5B, light planes used for this purpose had to be modified in the theater in order to accommodate litter cases.

Bombardment aircraft were occasionally used to evacuate patients, particularly during the early stages of the war when other types of planes were not available. These aircraft when returning to rear bases for repair were used to evacuate as many patients as possible by the

97. Report: Hq Thirteenth Air Force Surgeon, Thirteenth Air Force to Air Surgeon, AAF, Sub: none, 9 April 1943.

98. Report Hq 804th Medical Air Evacuation Squadron, Sub: "Quarterly Historical Report of Medical Activities," 31 December 1944.

99. Report Hq PFAF, Sub: "Air Evacuation by L-5B and C-64 Type Aircraft," 24 July 1945. (Annex P. 527).

11th Bombardment Group (H) in the SOPAC during 1942. ¹⁰⁰ Isolated instances of this type of evacuation occurred during the rest of the war. ¹⁰¹ Air evacuation of the Admiralty Islands during the first few weeks in March 1944 after the invasion was too hazardous to employ unarmed C-47 planes. In order to furnish evacuation from this area, five B-17's were modified by 54th Troop Carrier Wing and fitted with litter straps which permitted the carrying of 10 litter cases and up to 20 walking cases. (Photos 261 and 262). These well-armed planes were used to evacuate patients during a period of two weeks after which enemy air activity disappeared, and C-47's carried on the evacuation thereafter. These especially modified B-17's were not used again. ¹⁰²

O-69, DH-86, C-64 and other miscellaneous types of aircraft were used on occasions to evacuate personnel in various parts of the Pacific. (Photos 263 and 264). C-54's were never used for intra-theater evacuation. (Photo 265). Probably the type of plane most widely employed aside from the two main types mentioned above, was the Cataline (PBX). (Photo 266). These Aircraft were used on many occasions to evacuate personnel from enemy-held territory and in several instances were used

100. Report: Hq 11th Bomb GP Surgeon, McLevorth Bomb Group (H) to Surgeon, IAF, Sub: "Medical Report on Operations in Southwest Pacific," 28 March 1943.

101. Report Hq 45th Service Group from the Surgeon to the Surgeon Fifth Air Force, Sub: "Aplan of Evacuation of Casualties in Bombers," 15 May 1943.

102. Report Hq 804th Medical Air Evacuation Squadron, Sub: "Quarterly History of Medical Activities," 15 July 1944.

to evacuate large numbers of troops from areas which could not be served by transport or other types of planes. On New Georgia, over 400 patients were evacuated by these planes from Bairokeo Harbor. 103 Another instance of large-scale evacuation by these planes occurred from the northern part of Leyte during that campaign. It was recommended on several occasions that this type of plane be included in over-all plans of air evacuation and that equipment for the stowing of litters should be developed for them.

Helicopters were not used to any great extent in the evacuation of patients during the war in these theaters. (Photo 267). In June 1945 two infantry companies were isolated in an advanced area in the mountains of lower Luzon. All casualties sustained by this group had to be evacuated by hand over rough trails as ambulances or small planes could not reach them. The trip over the trail took approximately three days and required four men to carry the litter and a small squad to act as a protection during the trip. (Photo 268). The Surgeon, Air Service Area Command (ASAC) suggested the use of RD-3 Helicopters which had recently been assigned to this command. The isolated troops roughly cleared an area 25 feet by 35 feet and in a period of eight days over 50 serious patients were evacuated without loss. These patients were delivered at the door of the receiving office of the hospital 30 minutes after they were picked up. 104 The outstanding effectiveness of this

103. Report Hq 801st Medical Air Evacuation Squadron from the Commanding Officer to the Surgeon Thirteenth Air Force, Sub: "Report of Activities," 26 September 1943. (Annex P. 482).

104. Personal Interview with the Surgeon Air Service Area Command.

procedure resulted in the authorization of eight RD-4 helicopters per liaison L-5 squadron. A complete system of air evacuation of front-line troops based on the employment of L-5c and helicopters was drawn up for use in the invasion of Japan.

Evacuation by Small Planes: The use of small aircraft to evacuate personnel from areas inaccessible to larger aircraft or motor vehicles was first advocated by the Surgeon, Thirteenth Air Force, in April 1943. ¹⁰⁵ At this time a few of these planes were in operation at one of the island bases in the SOPAC. No extensive employment of these planes resulted from this recommendation and until the invasion of Luzon, these planes were only used sporadically to meet specific situations. In December 1944 the Third Air Commando Group, composed of several squadrons of different types of aircraft, arrived in the theater but no use was found for this specialized organization. The Surgeon, FEAF, realizing the possibility of using the L-5 squadron of this group for evacuation work recommended that such a system of evacuation be developed. The squadron was offered to the Sixth Army for the purpose of air evacuation, supply-dropping missions, re-supplying as a part of the Army Medical Service, and observation. ¹⁰⁶ The offer was accepted and the detached squadron was enlarged to three squadrons and reconstituted as the Fifth Air Liaison Group. Its primary function was air evacuation. (Photo 269).

105. Report: Hq Thirteenth Air Force Surgeon, Thirteenth Air Force to Air Surgeon, AAF, Sub: None. 9 April 1943.

106. Report: Hq FEAF, Sub: "Air Evacuation by L-5B and C-64 type Aircraft," 24 July 1945. (Annex P. 527).

When the group first started its operations were controlled by Fifth Air Force and considerable coordination was required with the Fifth Air Force, V Fighter Command, and 308th Bomb Wing Headquarters. A great deal of time was lost as a result of the many agencies involved. The group was finally permitted to handle all operations itself and only coordinated with the 308th Bomb Wing for intelligence purposes. The smoothness of operations thereafter indicated the wisdom of this procedure. Many of the aircraft were the gift of Detroit school children and carried the names of the donor schools on the cowling. (Photo 270). 107

The organization and operation of this system of air evacuation was carried on solely by the 135th Medical Group of the Sixth Army and its subordinate medical battalions. 108 The Air Forces contributed the planes but in no other respect handled any of the operational aspects. The 135th Medical Group Headquarters functioned as the central coordinating and regulating agency for dispatching the planes and contacting the Fifth Air Liaison Group. 109, 110 All procedures and installations were established by Medical Group Headquarters.

107. Letter Hq Light Plane Section, 3d Air Commando Group from the Intelligence Officer to the Commanding Officer 135th Medical Group, Sub: "List of Names of L-5 Aircraft Used for Air Evacuation," 17 March 1945.

108. Report Hq 135th Medical Group, Sub: "Quarterly Report for History of Medical Activities," 1 April 1945.

109. Report Hq 135th Medical Group, Sub: "The Use of Small Airplanes for Army Medical Evacuation on Luzon, P. I.," April 1945. (Annex P. 525).

110. Memorandum Hq 54th Troop Carrier Wing from Lt. Col. D. T. Smith to Lt. Col. A. J. Beck, A-3 Advanced Echelon Fifth Air Force, Sub: "Suggested Communications Plan for Air Evacuation," 21 April 1944. (Annex P. 518).

The Sixth Army Medical Battalions were responsible for the evacuation within their respective corps areas, supervised the construction and operation strips, and determined the need for planes at collecting and clearing companies and hospitals. An extremely efficient system of communications based on two-way radio, telephone and teletype, was put into operation by the 135th Medical Group. (Photos 271 and 272). Artillery Units were accustomed to construct small air fields close to the frontlines for the use of planes employed in artillery observation. With the commencement of this evacuation system, these fields were made available for L-5 operations by enlarging them to 1000 feet by 75 feet. (Photo 272). Clearing and collecting company commanders were directed to establish their stations adjacent to these strips if the tactical situation permitted. Strips for debarkation of patients were located wherever possible adjacent to each hospital and division clearing station and when indicated near to division collecting stations. These strips were built by the Sixth Army engineers upon request of the Army Surgeon. When ready for operation these strips were reported by coordinates and general location to the 135th Medical Group Headquarters which requested a check by the Fifth Air Liaison Group prior to their being placed in operation. A white cross of cloth was displayed in the center of these strips large enough to be visualized from 300 to 500 feet altitude. In forward areas it was only displayed during operational hours and an ambulance was displayed prominently alongside the strip to notify pilots that the strip was not.

in enemy hands. It not adjacent to a hospital or clearing station, a 25-bed holding station equipped of first aid under the care of a Medical Officer or Non-Commissioned Officer, was established by the Medical Battalions for processing patients. This system of strips was further coordinated by the 135th Medical Group Headquarters with the operation of C-46 and C-47 type planes from larger air fields. L-5 evacuation, except in an emergency, was not used in excess of distances of 30 to 40 miles.

By 1600 hours of the day preceding evacuation, the Army Medical Battalion Headquarters in each corps area had received information from the medical units in their area as to the number of patients to be evacuated on the succeeding day. This information was relayed at this time to the 135th Medical Group. The number of patients to be evacuated from each station, classified as to whether litter patients or sitting patients, was given in this message. In addition, patients were classified; "H" for local hospitalization, if convalescence was not expected to require more than 30 days, or "E" for off-island evacuation, if convalescence was expected to require more than 30 days, the time that these patients would be ready on the following day, the bed status of all hospitals in the area, emergency or unusual needs (especially medical supplies), and local problems pertaining to air evacuation were also given. Upon receipt of this information, the 135th Medical Group Headquarters determined the number of planes to be dispatched to each station, their destination, time of arrival,

and routing (the hospital or air strip which patients were to be evacuated). Planes were assigned on the basis of one plane for five to eight patients depending upon the distance of the haul. This information was passed by means of radio to the Fifth Air Liaison Group for confirmation. Upon receipt of the final schedule, Medical Battalions were informed so that all stations and units could complete their plans. Planes were dispatched by the Fifth Air Liaison Group the next morning to proper terminals to arrive at the designated times. Movement from hospitals or clearing stations was coordinated so that patients would arrive at the strip a few minutes in advance of the planes. (Photo 274). At the Receiving Station, planes were loaded with patients who were flown to hospitals for further evacuation or transport planes air strips. (Photos 275 and 276). The L-5's continued to shuttle between the two terminals until all patients were evacuated. (Photo 277). Changes in the number of patients, the need for additional planes and changes in routing were given to the chief pilots at the stations concerned. Emergency needs were called for by radio. Medical Officers stationed at these air strips decided on the suitability of the patient for air evacuation. All patients were evacuated by L-5's except psychotics. Patients who might have been adversely affected by altitude were flown at levels not to exceed 800 feet. Pilots were prohibited from flying at altitudes below 500 feet unless unusual circumstances dictated such a procedure. Property exchanges was maintained on an item exchange of litters and blankets.

Another extremely important function of this system was the carrying forward of vitally needed medical supplies and personnel. In one instance a qualified Neurosurgeon was flown into a division clearing station for consultation on a seriously wounded soldier. On another occasion a portable surgical hospital consisting of 37 men and 1000 pounds of equipment was flown to a collection company station which had been isolated by the enemy. The Fifth Air Liaison Group also operated a few C-64 Nordayn, high-wing monoplanes, which were used for longer missions. These planes were capable of carrying four litter patients or seven sitting patients each. They were not used to any great extent. 110a

L-5 air evacuation began on 9 February 1945 and throughout the course of the Luzon Campaign, demonstrated the versatility and efficiency of this system of operation. 111 A record of 89 patients were transported from one division clearing station to an army hospital in one day by four planes. The route trip was 32 miles by air and one pilot made 24 such round trips that day. 112 This type of evacuation permitted seriously wounded patients to be moved rapidly and safely to hospitals for definitive treatment by highly qualified

110a. Report Hq 5th Air Liaison Group to the Commanding Officer 135th Medical Group, 21 May 1945. (Annex P. 9).

111. Report Hq 135th Medical Group from the Commanding Officer to the Surgeon Headquarters Sixth Army, Sub: "Air Evacuation on Luzon," 24 June 1945. (Annex P. 520).

112. Report Hq 70th Medical Battalion, Sub: "Quarterly Medical History," 8 April 1945.

medical personnel. A long rough trip over bad roads was no longer necessary and in some instances this type of evacuation proved to be the only method feasible. The only factor encountered which threatened the success of this operation was the diversion of a considerable number of these versatile planes for other less important duties. On the basis of a protest by General Arueger, Commanding General, Sixth Army these diversionary practices were stopped and their use restricted to air evacuation missions. 113

Twenty to thirty planes were operated daily over a network of more than 40 strips. The casualties were evacuated efficiently rapidly and in comfort without a single serious operational accident or a single loss of a patient. Cooperation between the Air Liaison Group and the 135th Medical Group was of the highest order and was the major factor of the success of the organization and operation of the evacuation system. During a period of five months approximately 19,000 patients were evacuated and over 10,000 pounds of medical supplies were carried. In the conclusion of a report on this operation the Commanding Officer of the 135th Medical Group stated ". the success of intra-island air evacuation on Luzon indicates what can be accomplished by a combination of an efficient system of

113. Radio Commanding General, Sixth Army to the Commanding General FEAF. (Annex P. 515).

liaison, good communications, a coordinating headquarters and well-trained and cooperative Air Corps personnel whose main concern is the evacuation of sick and wounded." 114 This same organization stated in the opening paragraphs in its standard operating procedures on air evacuation by light planes:

"The use of small planes (L-5B) for evacuation of casualties is an unusually valuable addition to the transportation facilities of the Medical Department. It provides an ambulance service capable of diversified and extensive use in all zones of a theater of Operations and affords the wounded and sick a rapid, comfortable, and safe means of evacuation."

Small plane evacuation supplements but does not supplant motor ambulance evacuation. The latter must always be available, ready for instant use whenever plane facilities fail or are otherwise unavailable. The smooth combination of the two services is the desired objective, and when obtained, maximum efficiency of medical evacuation is assured." 115

-
- 114. Report Hq 135th Medical Group from the Commanding Officer to the Surgeon Headquarters Sixth Army, Sub: "Air Evacuation on Luzon," 24 June 1945. (Annex P. 525).
 - 115. Memorandum Hq 54th Troop Carrier Wing from Lt. Col. D. W. Smith to Lt. Col. A. J. Beck, A-2 Advanced Echelon Fifth Air Force, Sub: "Suggested Communications Plan for Air Evacuation," 21 April 1944. (Annex P. 520).

MEDICAL ASPECTS OF AIR EVACUATION:

Type of Patients Evacuated and Problems Encountered: The development of a rapid, smooth and safe method of evacuating patients by air was one of the outstanding developments in the medical care of service personnel during the war. It was found by personnel of air evacuation squadrons in the Pacific that in emergencies all types of patients could be carried by plane when trained medical attendants accompanied them. 116

During the early air evacuation of new beachheads, cases of every conceivable type were flown out of the combat zone to rear areas. The outstanding feature of the evacuation by small planes obviated the necessity of submitting these patients to long, rough trips by ambulance before they reached a hospital where they could receive adequate treatment. During the early days of the war at Guadalcanal and Buna, a large number of the patients evacuated were received direct from emergency aid stations on the front lines. Many of these patients never entered a hospital until after they were evacuated from the combat area by air. As a result the treatment afforded many of these patients prior to air evacuation was little more than routine first aid. Fractures were often immobilized in improvised splints, and wounds covered with battle dressings. Gun shot wounds of the chest and abdomen were evacuated after having received only the most necessary emergency treatment, from Guadalcanal could be

116. Report Hq 801st Medical Air Evacuation Squadron, Sub: "Quarterly Historical Report of Medical Activities," 10 July 1945.

be flown, if necessary, at minimum altitudes since the entire route to rear bases was over water. In many instances pilots on the advice of medical personnel flew under bad weather rather than attempting to fly over it at an altitude which might jeopardize the life of a seriously ill patient. 117 On the whole during the entire Pacific War almost all air evacuation routes could be flown at extremely low altitudes and problems, which occasionally did not arise when patients are flown at high altitudes, rarely occurred. One major exception was the short trip from the northern side of the Owen-Stanley Mountains to Port Moresby. This required the altitudes of 8000 feet be flown for a period of 15 minutes. In a few instances when the pass was closed by weather evacuation planes were forced to climb to 13,000 feet. It seems probable from incomplete reports available that during the earliest evacuation in this area a number of patients may have died as a result of flying at these altitudes. 118,119 It should also be remembered that as at Guadalupe these patients had received no definitive hospital treatment and many

-
- 117. Report Hq 801st Medical Air Evacuation Squadron from the Commanding Officer to the Surgeon Thirteenth Air Force, Sub: "Report of Activities," 26 September 1943. (Annex P. 483).
 - 118. Report of F/Lt. F. E. Kiel, Medical Officer, No. 36 Squadron FEAF, December 1942. (Annex P. 475).
 - 119. Report Hq U. S. Advance Base, Office of the Surgeon by M. N. Steinberg, Capt., MC Sub: "Evacuation of Patients by Air," 1942. (Annex P. 469).

were seriously ill. Weather conditions occasionally forced evacuation planes to altitudes which were not considered desirable by medical personnel attending patients on these planes. Aside from these two situations air evacuation proved to be no more dangerous to the safety of the patients than evacuation by ship or motor vehicle. On one occasion a patient with infantile paralysis was evacuated by air in an "iron lung." 120

Though evacuation of all types of patients could be accomplished by air, there were, however, certain types of patients which it was not desirable to evacuate in the manner unless it was absolutely necessary. Among this group were patients who were in danger of going into shock, patients with abdominal distention, and patients with chest conditions that markedly reduced the vital capacity of the lungs. 121,122 It was the responsibility of the Flight Surgeons on duty in the loading area to insure that only those patients who were suitable for this type of evacuation would be loaded on the planes. (Photo 237). 123 The burden placed upon these Flight Surgeons, however, was materially increased because of the fact that many Ground Force Medical Officers were not aware of these requirements. Many patients who were obviously unfit

120. Newspaper Article, (Annex P. 517).

121. Report Hq 801st Medical Air Evacuation Squadron, Sub: "Quarterly Historical Report of Medical Activities," 1 April 1945. (Annex P. 466).

122. Operations Memorandum Hq 135th Medical Group, Sub: "Procedures for Air Evacuation," 31 December 1944.

123. FEAF Regulation No. 25-50, Sub: "Air Evacuation," 21 July 1944. (Annex P. 457).

for air evacuation were sent to the air field and had to be returned by the Flight Surgeon, on duty there.¹²⁴ This problem continued throughout the course of the war in the Pacific in spite of many attempts to educate these officers. Another difficulty frequently encountered by air evacuation personnel was the improper preparation of patients for evacuation by air. Patients were frequently delivered to air fields who had not been fed and who had not previously emptied their bowels and bladder. When it was necessary to do this aboard evacuation planes considerable unnecessary work was required on the part of air evacuation personnel. Moreover the facilities provided on board planes were such as make any such procedure relatively unpleasant and uncomfortable for all patients concerned.¹²⁵ The proper sedation and restraint of psychotic patients was a problem that presented itself throughout the entire war and was rarely accomplished prior to the time patients were delivered to the plane.¹²⁶

Air Evacuation personnel were well trained in the proper loading of patients. Seriously-ill patients were placed in position on the

124. Report Air Surgeon, AAF to Commanding General AAF, Sub: "Report on Special Missions," 23 November 1944.

125. Memo Surgeon Genl to the Air Surgeon AAF, 13 January 1945. (Annex P. 12).

126. Report Hq 804th Medical Air Evacuation Squadron, Sub: "Air Evacuation of Psychotics in the SWPA," by T. I. Boileau, Capt., MC.

plane where they could be easily attended. Patients with wounds on one side of the body were placed in such a manner that these wounds were on the inside of the plane and those patients who might suffer the most from a rough trip were placed in the forward end of the cabin where the motion of the plane was usually the least. (Photo 230). As the majority of patients were taking their first airplane ride, it was necessary for air evacuation personnel to give them a short indoctrination talk prior to take-off. Such a talk greatly reduced the psychological tension of these patients and reduced the number of air-sick patients. Litter patients who were lying down rarely became air-sick. However, the development of air-sickness in one individual was extremely infectious and frequently an entire plane load of ambulatory cases would become sick. Sedation and placing the person in a horizontal position near the forward end of the plane alleviated many of these cases.

Equipment for Use in Evacuation of Patients by Air: As noted previously the first C-47's used in these theaters were not equipped with any method of stowing litters and they consequently had to be placed on the floor of the cabin. (Photo 269). ^{127,128} Later models were equipped with metal brackets which were stowed beneath the cabin floor until ready for use. This equipment consisted of a curved horizontal section

-
127. Report Hq 801st Medical Air Evacuation Squadron from the Commanding Officer to the Surgeon Thirteenth Air Force, Sub: "Report of Activities," 26 September 1943. (Annex P. 483).
 128. Report Hq U. S. Advanced Base, Office of the Surgeon, by M. N. Steinberg, Capt., MC. Sub: "Evacuation of Patients by Air," 1942. (Annex P. 469).

and a diagonal bracket. These were put together and fastened to the side of the plane by bolts equipped with cotter pins. (Photos 232 and 239). Much of this equipment was ill-fitting and difficult to set up and in addition, the many pieces made it easy for a vital section to be lost.¹²⁹ It was a common practice to set up the top tier of this type of bracket and keep it in place at all times. This did not interfere with the majority of cargo carried by C-47's. The remaining brackets were partially assembled and fastened to the side of the plane in an easily accessible position by means of shock cord. During the middle of 1944 new C-47's began to arrive in the theater equipped with a litter suspension system consisting of web straps. (Photo 230). These straps when not in use, were permanently stowed in canvas containers situated along the ceiling of the cabin. This equipment could be easily assembled in a short time. Further more the equipment could not be removed from the plane and therefore was always available.

The first types of metal brackets would only accommodate the special type of flooding aluminum litters developed for use by air evacuation squadrons. (Photos 230 and 232). These litters were extremely light but the number available in the theater was limited. It was not possible to supply all hospitals with a sufficient number of these litters and it was, therefore, necessary to transfer patients from one type of litter to another at the air field prior to embarkation. This

129. Report Hq 804th Medical Air Evacuation Squadron, Sub: "Air Evacuation of Casualties," 1943. (Annex P. 494).

procedure consumed time and was frequently injurious to the patient. An attempt was made in the SOPAC to have the majority of standard Medical Department litters modified so that they could be used in air evacuation planes.¹³⁰ The problem was not solved until types of brackets arrived in the theater which would accommodate all types of litters.

C-47's standing in the blazing tropical sun while awaiting patients or while waiting for permission to take off, became vertiable ovens in their interiors. Temperatures as high as 140 and 150 degrees were recorded. Needless to say such conditions were not favorable for seriously sick personnel. Experiments by the 2nd Central Medical Establishment proved the feasibility of cooling these planes while they were on the ground with portable equipment could not be improvised in the theater to most requirements and equipment designed for the purpose was not available.

Patients on leaving the ground were usually perspiring freely and their clothing soaked with sweat because of the above conditions.

-
- 130. Report Hq 801st Medical Air Evacuation Squadron from the Commanding Officer to the Surgeon Thirteenth Air Force, Sub: "Report on Activities," 26 September 1943. (Annex P. 483).
 - 131. Report Hq 2d Central Medical Establishment, Sub: "Investigation of the Cooling of planes used in Air Evacuation," June 1944.
 - 132. Report Hq AAF from Col. G. E. Ledfors, MC, to the Air Surgeon AAF, Sub: "Report of Trip to SWPA with Reference to Medical Supplies," 16 September 1944.

For maximum efficiency, troop carrier planes flew at an altitude of approximately 10,000 feet when possible. Temperatures at these altitudes were usually very cool and often actually cold. Many patients suffered from this abrupt change in temperature. During the early days of the war insufficient blankets were available to protect patients while they were being evacuated by air. (Photo 269)

During the later part of the war sufficient blankets were made available through personnel lying on a bare litter were usually uncomfortable because of the lack of insulation beneath them. (Photo 230).¹³²

Patients flying at these altitudes occasionally require oxygen, though with the proper selection of patients, the number of patients requiring such therapy was not any greater than when transported at sea level. No oxygen equipment was issued to air evacuation squadrons and the oxygen equipment with which C-47's were equipped was insufficient and improperly located for use by these personnel. As a result in both theaters attempts were made to improvise adequate portable oxygen equipment. In the SOPAC an extremely satisfactory type of rebreather equipment (Mine Safety Appliance Company, Mark II) was obtained from the Navy. This apparatus was light, could be easily carried around,

132. Report F/Lt. F. W. Keil, Medical Officer of No. 36 Squadron, RAAF, December 1942. (Annex P. 475).

conserved oxygen and had a supply lasting three or four hours.¹³³ In the SWPA a portable type of equipment was developed by the 804th MAES,. This equipment consisted of a low-pressure C-type oxygen bottle with an attached demand-type A-13 regulator, and the mask was of the standard gas mask. (Photo 270).¹³⁴ Equipment developed during the latter part of the war specifically for air evacuation was never available to air evacuation squadrons in these theaters.

Another problem arising in the safe transportation of patients by air was the fact that no proper type of restraint was available to restrain excited violent psychotic patients. In one instance a psychotic patient managed to work free from his improvised restraint, seized a revolver and threatened to shoot the pilot through the head. Luckily he was dissuaded from his designs, several types of restraints were developed by air evacuation personnel in the theater and found widespread acceptance. (Photo 45). The type of restraint developed during the latter part of the war in the Zone of Interior was never made available to air evacuation squadrons in these theaters. However, from the few samples that were seen it was felt by air evacuation personnel in the SWPA that the type which had been locally designed was more suitable to their requirements.

133. Report Hq 801st Medical Air Evacuation Squadron from the Commanding Officer to the Surgeon Thirteenth Air Force, Sub: "Report of Activities," 26 September 1943. Annex p. 483.

134. Report Hq 804th Medical Air Evacuation Squadron, Sub: "Air Evacuation of Casualties," 1943. Annex p. 494.

One problem which worried air evacuation personnel and was never solved during the war was that of what should be done with patients should a water landing be necessary. This was particularly true of litter cases that could not take care of themselves. No procedure was developed which was felt to be satisfactory and in the majority of instances planes were not supplied with sufficient survival equipment to take care of the number of patients usually carried. (Photo 271).^{135,136} No instance was recorded where such a procedure was necessary though several plane loads of patients were lost under unknown circumstances.

The medical kit originally supplied air evacuation squadrons was extremely bulky and heavy. It contained many items of equipment not necessary for use in intra-theater evacuation. Moreover, it was not supplied with plasma units and other items which were desirable. The 801st MAES never used this type of equipment. During the first part of the war they used a kit consisting of canvas panel with many pockets which could be hung on the back wall of the latrine and a canvas container for bedpan, urinal, and plasma. (Photo 232).¹³⁷ This type of equipment did not prove entirely satisfactory and a

-
- 135. Report Hq 801st Medical Air Evacuation Squadron from the Commanding Officer to the Surgeon Thirteenth Air Force, Sub: "Report of Activities," 26 September 1943. (Annex p. 483).
 - 136. Report Hq 820th Medical Air Evacuation Squadron, Sub: "Quarterly Medical History of Squadron Activities," 31 March 1945.
 - 137. Report Hq 801st Medical Air Evacuation Squadron from the Commanding Officer to the Surgeon Thirteenth Air Force, Sub: "Report of Activities," 26 September 1943. (Annex p. 483).

small compact canvas kit was designed and manufactured locally. (Photos 42, 43, and 44). This kit was widely used by air evacuation personnel throughout the war and was adopted by other squadrons. It was found preferable to the small kit eventually developed and distributed by the Air Force.¹³⁸ One particular problem facing air evacuation personnel was the insanitary methods for the disposal of excreta aboard planes. This was particularly true of the bedpan for there was insufficient water to clean it after each time it was used. It was recommended that a disposal liner be developed which would have solved this problem.¹³⁹

Air evacuation routes in these areas frequently required sustained flight for as long as eight or even nine hours. It was essential that sick patients be given some form of nourishment during this period. Air evacuation squadrons supplied with one gallon thermos jugs for this purpose. However, the type supplied was not satisfactory in that it frequently came apart and the faucet became frozen.¹⁴⁰ Sandwiches and other types of food were occasionally supplied by the Red Cross but usually dried out before they were consumed, thereby reducing their palatability. Some air evacuation

138. Report Hq 801st Medical Air Evacuation Squadron, Sub: "Air Evacuation Medical Kit," April 1944.

139. Memo Surgeon FEAF to The Air Surgeon AAF, 13 January 1945 Annex p. 12.

140. Report Hq AAF from Col G. E. Ledfors, MC to the Air Surgeon AAF, Sub: "Report of Trip to SWPA with Reference to Medical Supplies, 16 September 1944.

squadrons routinely carried "10 in 1" or "K" rations on evacuation flights. There was some difficulty in obtaining the necessary authorization to requisition this food.^{140a} Moreover, inasmuch as much as a great portion of this ration could not be used, this wasteful practice was discontinued. It was found the patients most appreciated fresh bread and consequently this item was carried in loaf form with butter, spreads cheese, and meats in a specially constructed food box. Sandwiches were made in flight and the patients fed. Their appreciation was ample award for the extra work involved.¹⁴¹

Property Exchange: Considerable difficulty was encountered by both the medical Departments of the Ground and Service Forces and Air Evacuation squadrons in the proper exchange of property during the war. Planes arrived in the forward areas without litter and blankets, creating a considerable drain on the stocks of this equipment in forward areas. The forwarding of the necessary number of these items of equipment on each plane was impractical because of the weight involved which materially reduced the load which could be carried. (Photo 270). Moreover, such a procedure was time-consuming, bulky, involved too many people, and led to loss of blankets and litters. In addition, the complete accomplishment of such a procedure required similar exchange at the point of

140a. Report Hq AAF from Col G. E. Ledfors, MC, to the Air Surgeon AAF, Sub: "Report of Trip to S'PA with Reference to Medical Supplies, 16 September 1944.

141. Report Hq 820th Medical Air Evacuation Squadron, Sub: "Quarterly Medical History of Squadron Activities," 31 March 1945.

Debarkation. This had been found to be almost entirely impossible. The final solution arrived at, which proved to be satisfactory, was the requisitioning of litters and blankets weekly by the Task Force Surgeon from the rear base. The Medical Supply Officer there would then ship those items directly to the parties involved, by air.¹⁴² In order to make a sufficient quantity of this equipment available to beachhead troops, large stocks were carried by hospital ships and other ships carrying medical supplies which accompanied invasion forces.

MEDICAL AIR EVACUATION SQUADRON:

Organization: The Basic organization of the Medical Air Evacuation Squadron (MAES) prove to be efficient for the mission for which it was designed in almost all respects. In this theater the flights, outlined in T/O S-447, dated 15 February 1943, were rarely used as detached sections.¹⁴³ The entire unit as a rule was based together and operated as a whole. In a few instances the various Air Evacuation Squadrons covered certain specified areas of the theater independent of the other units. In the majority of instances, however, they operated inter-dependently covering the same routes and performing the same duties. Certain difficulties arose when all units were not located together at the same base. The absence of a coordinating air

142. Report Hq 820th Medical Air Evacuation Squadron, Sub: "Quarterly Medical History of Squadron Activities," 31 March 1945.

143. Report Hq 801st Medical Air Evacuation Squadron from the Commanding Officer to the Surgeon Thirteenth Air Force, Sub: "Report of Activities," 26 September 1943. (Annex p. 463.)

evacuation officer in higher headquarters made it necessary for one unit to assume the leading role and coordinate the activities of all units. The 804th MAES assumed this responsibility in most instances.¹⁴⁴ It was recommended on several occasions that an Air Evacuation Group Headquarters be organized to serve this function.

Five Flight Surgeons, were authorized each Air Evacuation Squadron. These officers were employed primarily to man bases in forward areas. The duties of these officers required the coordination between air evacuation operations and hospitals in these areas, the supervision of patients prior to evacuation, and the loading of planes. Experience with the system developed for the L-5 evacuation pointed out that, with proper organization and adequate training of all medical officers as to which patients could and could not be evacuated by air, the presence of an air evacuation officers at these bases was unnecessary. These officers were rarely employed to their full capacity and many found themselves with considerable time on their hands. It was the consensus of personnel in the Air Evacuation Squadrons that, with the conditions outlined above, a total of five Medical Officers per Air Evacuation Squadron were not required.¹⁴⁵

One of the hardest working men in these squadrons was the Medical Administrative Officer. His duties included routine administration,

144. Report Hq 804th Medical Air Evacuation Squadron, Sub: "Quarterly Report of Medical Activities," 31 March 1944.

145. Personal Interviews with Air Evacuation Officers.

supply, transportation, mess, and many other miscellaneous duties such as censor, war bond officer, and security officer. This officer was considered to have more work than he was capable of handling efficiently, and it was recommended that an additional Medical Administrative Officer be assigned in lieu of one to the Flight Surgeons. In addition, it was also recommended that the Medical Administrative Officer be authorized a Captaincy because of his important position in the efficient operation of the Air Evacuation Squadron.¹⁴⁶ Another change in the T/O that was suggested was the addition of more basis enlisted personnel in order to accomplish the many duties required in the operation of a camp in which a large number of nurses were quartered.¹⁴⁷ There were insufficient men to provide for adequate transportation, sanitation, and guard duty.

Training and Selection of Personnel: A School of Air Evacuation was established in the fall of 1942 at Bowman Field, Louisville, Ky. Air Evacuation Squadrons were to have been trained at this school prior to shipment overseas. However, personnel of the 801st MAES received no training at this school because of the urgent necessity

146. Report Hq AAF Col S. E. Ledfors, MC to the Air Surgeon AAF, Sub: "Report of Troop to S'PA with Reference to Medical Supplies," 16 September 1944.

147. Report Hq 801st Medical Air Evacuation Squadron, Sub: "Quarterly Historical Report of Medical Activities," 1 October 1944.

for their shipment overseas. As a result, a school had to be established overseas by the medical officers of this organization in order to train both enlisted and nurse personnel in the procedures and requirements of air evacuation.¹⁴⁸ In addition, many of the enlisted replacements received during the last year of the war, had not received air evacuation training in the states.¹⁴⁹ The training of these replacements in the theater added greatly to the burden of the Air Evacuation Squadrons.^{149a}

Personnel trained at Bowman Field were well-founded in all aspects of the principles of air evacuation. It was felt on the part of some personnel that this training had been superfluous in certain respects such as the infiltration course given to nurses and the detailed loading procedures given to all personnel which were never practiced in this theater of operations. Moreover, it was the opinion of the majority of personnel that medical technicians would have been preferable to surgical technicians as the training of the former was more applicable to air evacuation.¹⁵⁰

148. Report Hq 801st Medical Air Evacuation Squadron from the Commanding Officer to the Surgeon Thirteenth Air Force, Sub: "Report of Activities," 26 September 1943.

149. Report Hq 801st Medical Air Evacuation Squadron, Sub: "Quarterly Historical Report of Medical Activities," 1 April 1945.

149a. Letter Hq 804th Medical Air Evacuation Squadron from the Commanding Officer to the Commanding General 54th Troop Carrier Wing, Sub: Training Problems," 23 July 1945.

150. Report Hq 801st Medical Air Evacuation Squadron, Sub: "Quarterly Historical Report of Medical Activities," 1 October 1944.

During the course of the war, nurses were selected for air evacuation on the basis of height and weight and their ability to pass the 64 examination for flying. As a result of these requirements, the nurses assigned to these squadrons were relatively small, and considerable difficulty was encountered by them in performing their duties. Many instances were noted where it was difficult for these small girls to climb in and out of jeeps, board airplanes and treat patients in the top tier of litters in the plane. Moreover, it was felt that the additional few pounds that would have been added had larger girls been used, would have been a negligible factor when considering the load limits of the planes in which they flew. Personality defects and emotional instability also were noted more frequently than would expect in groups of only 25 persons. Mental compatibility and emotional stability were very desirable in a group of nurses that had to live and work closely together under the stress and strain of the combat conditions experienced in these theaters. Misunderstandings occasionally arose that seriously threatened the operational efficiency of this group of personnel. It was felt that a more careful method of selection would have prevented such situations from arising.¹⁵¹

151. Report Hq 801st Medical Air Evacuation Squadron, Sub: "Quarterly Historical Report of Medical Activities," 1 April 1945.

Utilization of Personnel: It was originally planned that personnel of the Air Evacuation Squadrons would work in teams composed of a Flight Nurse and a Surgical Technician, and that Flight Surgeons would fly with patients only when absolutely necessary. In the SOPAC on Medical Officer was required each day to fly to the forward area to pick up serious patients. The Medical Officer on such a plane was unable to render any more professional care than were the nurses. Frequently these Medical Officers did not even receive patients and many unnecessary trips were made by them. It was also found necessary in this theater to split the air evacuation team in order that all planes could be supplied with a medical crew member. Nurses and surgical technicians flew on these planes separately.¹⁵² In SWPA, during the early days of a campaign, when nurses were not permitted to fly to forward areas, it was also necessary for surgical technicians to accompany patients alone. This procedure was found to be entirely satisfactory in instances where the patients evacuated were not critically ill or seriously wounded, or when the technician was thoroughly trained. It was noted that Navy Corpsmen were better trained along medical lines than were the Army technicians. Moreover, it was felt that though the surgical technician was able to assist the

152. Report Hq 801st Medical Air Evacuation Squadron From the Commanding General to the Surgeon Thirteenth Air Force, Sub: "Report of Activities," 26 September 1943.

nurse when heavy duties such as lifting patients was required, his presence was not absolutely essential as other personnel on board the plane could lend a hand when necessary.¹⁵³

Contrary to the opinion of many personnel unacquainted with the operations of these units, the presence of nurses in the forward areas did not present many problems. Nurses are trained to face many conditions and situations usually not encountered by other women. As a consequence the conditions frequently found in forward areas were rarely considered to be objectional by them. The only problem which did arise was the necessity of providing guards for nurses' quarters. In many instances the nurses' areas were surrounded with high fences, and as a result, few instances occurred where nurses were molested.(Photo 301).

Nurses and enlisted personnel in S'WPA were permitted to accompany patients to the Zone of Interior on a few occasions during the early part of 1944.¹⁵⁴ With the arrival of Air Evacuation Squadrons assigned to ATC, this procedure was stopped. In both theaters, flying personnel of Air Evacuation Squadrons were designated as air crew

153. Report Hq 820th Medical Air Evacuation Squadron, Sub: "Quarterly Historical Report of Medical Activities," 31 December 1944.

154. Report Hq 804th Medical Air Evacuation Squadron, Sub: "Quarterly History of Medical Activities," 15 July 1944.

members on troop carrier planes.^{155,156,157} This fact prevented them from being removed from planes because of passengers or freight with higher priority. They were, therefore, able to return to their units more rapidly than would have been the case had this procedure not been adopted.

Health, Morale and Notation: On the whole the health and morale of the personnel of these units was maintained at an extremely high level during the entire war.¹⁵⁸ Nurses and enlisted personnel average monthly approximately 80 to 100 hours though in many instances up to 150 hours were flown. Many of the evacuation flights required three or even five days departure from the main base. A high level of morale was maintained when regular evacuation flights were flown. It was noted that the morale, particularly that of the nurses, was adversely affected by periods of inactivity.^{159,160} One factor which

-
- 155. Letter Hq 801st Medical Air Evacuation Squadron from the Commanding Officer to the Commanding Officer XIII Air Force Service Command, Sub: "Designation as Aircorps Member," 15 November 1943. (Annex p. 505).
 - 156. Report Hq 804th Medical Air Evacuation Squadron, Sub: "Quarterly History of Medical Activities," 15 July 1944.
 - 157. Letter Hq ADVON Fifth Air Force from the Deputy Air Force Commander to the Commanding General 54th Troop Carrier Wing Sub: "Employment of Air Evacuation Squadron," 27 October 1943.
 - 158. Report Air Surgeon, AAF to Commanding General AAF, Sub: "Report on Special Mission," 23 November 1944.
 - 159. Report Hq 804th Medical Air Evacuation Squadron, Sub: "Quarterly Historical Report of Medical Activities," 31 December 1944.
 - 160. Report Hq 804th Medical Air Evacuation Squadron, Sub: "Quarterly History of Medical Activities," 17 July 1944.

undoubtedly served to maintain morale was the eligibility of air evacuation personnel for decorations and rest leaves. (Photo 282). For a considerable period of time, nurses of the 801st MAES, Though actually performing evacuation duties, were not permitted to wear Flight Nurses' Wings, as they had not completed the course at the School of Air Evacuation.¹⁶¹ Moreover, though permission was eventually obtained, their wings were taken away from them upon their return to the United States and they were not permitted to wear them unless they took and passed the course at Bowman Field.¹⁶² Authority was granted to issue Aircrew Members' wings to the surgical technicians in the 801st MAES, but such personnel in the other Air Evacuation Squadron were not permitted to wear these wings even though they had been designated as members of the aircrew and were part of the crews on the same missions as the crews of troop carrier planes.¹⁶³

Fatigue among flying personnel of these units were rarely encountered prior to the completion of 12 months duty in these theaters. It was felt by some personnel that the nurses were apt to develop fatigue sooner than the enlisted personnel, and that one possible

161. Report Lt Col G. F. Baier, III, MC, to the Air Surgeon, AAF, Sub: "Medical Report Of Thirteenth Air Force," 11 December 1943.

162. Personal Letter from a former Flight Nurse to the Commanding Officer 801st Medical Air Evacuation Squadron, December 1943.

163. Letter Hq 801st Medical Air Evacuation Squadron from the Commanding Officer to the Commanding Officer XIII Air Force Service Command, Sub: "Designation as Air crew Members," 15 November 1943. (Annex p. 505).

reason for this was the demand placed upon them for social activities.¹⁶⁴ All Factors previously discussed on morale and fatigue had a direct bearing on personnel of these squadrons. However, it should be pointed out that in the majority of instances air evacuation units were well-equipped with semi-permanent installations. Also they were based in areas which were not far enough forward to feel the full effect of enemy activities nor far enough back to encounter the boredom and monotony so frequently found in rear areas. (Photos 284,285,286).

The designation of air evacuation personnel as aircrew members resulted in certain advantages accruing to flying personnel of Air Evacuation Squadrons. One of these was the permission to enjoy periodic rest leaves. These leaves of nine days duration were granted approximately every three months. The rest leave facilities in Auckland, New Zealand and Sydney, Australia were available to these personnel. (Photo 283). On the other hand this group of flying personnel were not given the consideration for rotation granted aircrew personnel of troop carrier units who were performing similar duties. ^{165,166,167}

-
- 164. Report Hq 801st Medical Air Evacuation Squadron, Sub: "Quarterly Historical Report of Medical Activities," 1 April 1945.
 - 165. Report Hq 801st Medical Air Evacuation Squadron, Sub: "Quarterly Historical Report of Medical Activities," 1 October 1944.
 - 166. Report Hq 804th Medical Air Evacuation Squadron, Sub: "Quarterly Historical Report of Medical Activities," 1 October 1944.
 - 167. Memo from the Surgeon FEAF to the Air Surgeon AAF, 25 March 1945. (Annex p. 20.).

That such consideration was warranted can be seen from the fact that four Flight Nurses and five surgical technicians were killed while on operational flights and a number were seriously injured in aircraft accidents and had to be evacuated, and several others were wounded by enemy action or injured in air craft accidents. The majority of Flight Surgeons and enlisted men served a large portion of their total time overseas in the most forward areas. Many Flight Surgeons, Flight Nurses and surgical technicians accumulated as many as 1500 hours of flying during their period of duty in these theaters. Few nurses were rotated prior to the completion of 18 months. No Flight Surgeon on duty with air evacuation units was rotated to the United States prior to the end of the war and several had completed over 30 months of overseas duty.

A policy was announced by the War Department in 1943 whereby nurses would be replaced after one year's duty in a theater of operation or at any time when they showed clinical symptoms of any type, due to excessive flying.¹⁶⁸ Though this directive specifically set a limit of one year of overseas duty, replacements for these nurses were not available at the end of this time and they were not rotated until they had served from 15 to 20 months. Only the nurses of the 801st MAES were rotated under

168. Radiogram from the COMGESOPAC to the Commanding General Thirteenth Air Force, 30 August 1943. (Annex p. 503.)

this policy as it was rescinded in June 1944. It was the opinion of the Air Surgeon and all interested War Department Agencies including the War Department General Staff, G-1, that provisions for the rotation of Flight Surgeons, Flight Nurses and Surgical Technicians assigned to Air Evacuation Units were made in War Department Circular No. 8, January 1945,¹⁶⁹ The substance of this circular provided for the rotation of personnel who had experienced hazardous or unusual duty overseas and who were not covered by other special directives. However, the theater interpreted this circular in a different manner and required 30 months of continuous overseas duty before personnel were eligible for rotation under its provisions. An attempt was, therefore, made by the Surgeon, FEAF, to rotate Flight Nurses under the provisions of the War Department Circular 372, November 1944, which provided for the return to the Zone of Interior of personnel who could not be rehabilitated in the theater. This procedure was not approved. The return of Flight Nurses to the Zone of Interior when they had reached their limit of effort was eventually accomplished by authority to request replacements over and above the over-all theater Quotas. When Flight Nurses were considered to be deserving of rotation, a request was made by their Commanding Officer to the Surgeon, FEAF, who in turn requested replacements from the United States. Plans were made in July 1945, to request additional nurses in order that an average could

169. Letter Hq AAF from the Commanding General AAF to the Commanding General FEAF, Sub: "Rotation of Army Air Forces Flight Nurses, Flight Surgeons and Surgical Technicians and Accompanying Check Sheets from Hq FEAF," Annex p. 503.

be created.¹⁷⁰ Such a procedure would have prevented the delay which occurred when it was necessary to await the arrival of replacements after the request for rotation had been forwarded.

No provisions for the rotation of enlisted men of the squadrons, either flying or ground forces, were made other than the theater regulations covering all personnel. The Commanding Officers of Air Evacuation units were unable to return these personnel to the United States under the provisions of War Department Circular 372, November 1944, until the spring of 1945. Even this procedure was not entirely satisfactory as many of the recommendations for return under the provisions of this circular were disapproved. It was the recommendation of the Air Evacuation Officer in the Office of the Surgeon, FEAF, in July 1945, that those technicians with short service overseas, who showed evidence of fatigue should be taken off flying status or should get more hours to their credit in order that they could be rotated under the provisions of War Department Circular 372, November 1944.¹⁷¹

At no time were any of the Flight Surgeons of the Air Evacuation Squadrons given any consideration for rotation to the United States other than that granted all medical officers existing theater policies.

170. Personal Letter from the Air Evacuation Officer FEAF to the Commanding Officer 801st Medical Air Evacuation Squadron. Annex p. 509.

171. Personal Letter from the Air Evacuation Officer, FEAF to the Commanding Officer 801st Medical Air Evacuation Squadron. Annex p. 509.

All efforts to obtain a special rotation policy or to rotate them under the provisions of either Circular 372, November 1944, or Circular 8 January 1945, were disapproved.^{172,173,174,175}

Equipment: The equipment of air evacuation planes and that used by air evacuation personnel in the evacuation of patients has already been discussed. Aside from these conditions the equipment authorized Air Evacuation Squadrons was satisfactory, with few exceptions. Though designed for airborne movement these units did not lend themselves to this procedure and in only one instance was it carried out. A number of recommendations for additional equipment were made during the course of the war in these theaters. The majority of these recommendations represented the personal preference of individuals to meet conditions that existed at a particular time. There were, however, certain items, unauthorized in the Table of Equipment, which were universally desired by these units. Several small generators were required to provide power for the camp area and the operations building on the strip.¹⁷⁶ Insufficient tools were provided to construct adequate camp

-
- 172. Letter Hq FTA, From the Commanding General AAF to the Commanding General FFAF, Sub: "Rotation of Army Air Force Flight Nurses, Flight Surgeons and Surgical Technicians and Accompanying Check Sheets from Hq FFAF," Annex page 506.
 - 173. Memo from the Surgeon FFAF to the Air Surgeon AAF, 25 March 1945. p. 20.
 - 174. Report Hq 701st Medical Air Evacuation Squadron, Sub: "Quarterly Historical Report of Medical Activities," 1 April 1945.
 - 175. Personal Letter from the Air Evacuation Officer FFAF to the Commanding Officer 801st Medical Air Evacuation Squadron. Annex p. 509.
 - 176. Report Hq AAF from Col G.E. Ledfors, MC to the Air Surgeon AAF, Sub "Report of Trip to SWPA with Reference to Medical Supplies," 16 Sept

sites and only seven pyramidal tents were provided to house 6 officers, 25 nurses, and 62 enlisted men.¹⁷⁷ The only vehicles authorized these units were nine jeeps. It was felt that a weapons' carrier and a $1\frac{1}{2}$ -ton truck would have been more use than some of the jeeps. In addition at least one ambulance found to be necessary.¹⁷⁸ Certain change in the clothing supplies for Flight Nurses were recommended, particularly that issued for use while evacuating patients. The majority of nurses obtained the regulation Air Force coverall for this purpose. This item was, however, designed for men rather than women and as a result of ill-fitting and not entirely suitable. (Photos 287 and 288.).¹⁷⁹

177. Report Hq 801st Medical Air Evacuation Squadron from the Commanding Officer to the Surgeon Thirteenth Air Force, Sub: "Report of Activities," 26 September 1943. Annex p. 483.

178. Report Hq 820th Medical Air Evacuation Squadron, Sub: "Quarterly Medical History of Squadron Activities," 31 March 1945.

179. Report Hq AAF from Col G. E. Ledfors, MC, to the Air Surgeon AAF, Sub: "Report of Trip to SWPA with Reference to Medical Supplies," 16 September 1944.

CHAPTER XV

NUTRITION

The food supplied Air Force troops in these theaters was undoubtedly one of the most important factors affecting morale. In addition, it was an extremely important factor in the maintenance of the operational efficiency of Air Force units. In discussing nutrition, the most important aspects of the problem to be kept in mind is the complete adequacy of the food that actually reached the stomach of an individual.¹ An exemplary diet can be planned on paper but if it is not eaten, it is of no more nutritive value to the individual than the paper it was planned on. On the whole the diet is planned for troops in these theaters was adequate throughout the war. That the nutritive value of the food actually ingested was not sufficient in many instances, will be pointed out in the ensuing discussion as well as the reasons for this unsatisfactory situation.

A discussion of the various types of rations issued to Air Force troops in these theaters is not presented in this report. This chapter will deal with the general overall trends in the rations issued during the war and their adequacy in maintaining the nutritional

1. Report 2d and 3d Operations Analysis Section, FEAF, Sub: "Health," 26 February 1945.

balance of the individual. The Air Force has no control over the ration supplied Air Force troops, except for the occasional supply of fresh food by "Fat-Cat" planes. Air Force rations were obtained from USASOS Quartermaster Supply Depots and distributed by the quartermaster sections of Air Force Air Service Groups.

One factor which had a pronounced effect on the acceptability of the ration was that a large portion of the ration was made up of Australian goods. The proportion of foods obtained from this source was considerably reduced during the latter part of the war when more shipping became available to these theaters. On the whole the food obtained from Australia was much poorer quality and less acceptable to Air Force troops than that obtained from the United States. (Photo 292).²

As a result of the lack of sufficient refrigerator ships, the Army was unable to supply troops in these theaters with any appreciable quantity of fresh food. This was particularly true during the early days of the war and less so during the last six months of hostilities. Local sources of fresh food such as gardens and the large number of fish that were usually procurable nearby, were rarely used. (Photo 291). In the few instances where they were used, they proved to be an extremely satisfactory method of improving the diet. It was noted on many occasions that the periodic issue of fresh food greatly increased

2. Report Hq Office of the Quartermaster General, Washington, D.C., Research and Development Branch, Planning Division, by Lt Col D. H. Dill, QMC, Sub: "Report on Observation in the Southwest Pacific and Pacific Ocean Areas, October - December 1944, Part VII, Field Ration "B".

the acceptability of foods that were ordinarily refused.^{2a} The marked contrast between the quantity of the food issued to Army units and that issued Navy units was particularly noticeable. Frequent issues of highly acceptable rations such as canned meats and chicken and fresh meats and vegetables were common occurrences in the Navy messes. These messes were also well supplied with refrigerators, ice machines, and ice cream machines. There is no question that the Navy ration was far superior to that issued by the Army and consequently of much greater nutritive value.³

INCIDENCE AND EFFECT OF AN INADEQUATE DIET ON AIR OPERATIONS:

Concrete clinical evidence of an inadequate diet was rarely available. Cases of nutritional deficiency were rarely severe enough to be hospitalized. However, the loss of efficiency among individuals suffering from such conditions was great.^{4,5} Individuals proven to be in a poor nutritional state by laboratory analysis when compared with individuals in a good nutritional state, were shown to have a greater incidence of:

-
- 2a. Report Hq Thirteenth Air Force from the Commanding General to The Commanding General FEAF, Sub: "Nutrition Report," 23 December 1944. Annex p. 561.
 3. Report Air Surgeon, AAF, to Commanding General, AAF, Sub: "Report on Special Mission," 23 November 1944.
 4. Report Hq ADVOM Fifth Air Force Surgeon, Advanced Echelon, Fifth Air Force to Surgeon, USASOS, Sub: "Report of Activities, Advance Echelon, Fifth Air Force, December 31, 1942." Annex p. 28.
 5. Report Hq ADVOM, Fifth Air Force by the Nutrition Officer to the Surgeons All Units, Sub: "Ration as a Nutritional Problem to Air Force Surgeons," 6 October 1943. Annex p. 546.

- (1) Hospitalization and sick call attendance in the previous six months.
- (2) Acute respiratory infections in the previous six months (six times as many per man)
- (3) Acute diarrheas in the previous six months (10 times as many per man)
- (4) Complaints of headache, insomnia and feeling of faintness on arising.
- (5) Numbness and tingling sensations
- (6) Poor morale
- (7) Increased fatigability
- (8) Poor appetites
- (9) Other more technical conditions which impair efficiency.⁶

Many instances occurred of failure to regain the weight normally lost by personnel entering the tropics. This weight loss was often excessive, frequently as great as 50 pounds. An adequate dietary intake would not have resulted in such large reduction in weight. In 1942 clinical scurvy, beri-beri, pellagra, and other nutritional diseases were noted among Air Force troops in New Guinea.^{7,8} Throughout the war, The Dental Office made frequent comments on the high incidences of scorbutic (Scurvy) gum conditions.⁹ (Photo 289).

-
6. Report Hq 26th Hospital Center from the Nutrition Officer to the Commanding Officer, Sub: "Chemical Determination of Nutritional State of Full Duty Troops," 20 October 1945. Annex p. 536.
 7. Report Air Surgeon, AAF to Commanding General, AAF, Sub: "Report on Special Mission," 23 December 1944. (Annex p. 531).
 8. Report Hq Fifth Air Force from the Commanding General to the Commanding General USASOS, Sub: "Information on Adequacy and Acceptability of the Ration," 24 February 1943. Annex p. 531.
 9. Report Hq ADVON Fifth Air Force, Surgeon, Advanced Echelon, Fifth Air Force to Surgeon, USASOS, Sub: "Report of Activities, Advance Echelon, Fifth Air Force, December 31, 1942."



Evidence of deficiencies in the diet as it was issued is more available than dietary deficiencies among personnel. Unit Surgeons throughout the war in these theaters made frequent comments in monthly sanitary reports on the inadequacy of the diet served in their messes.¹⁰ After the middle of 1941 theater directives required that such comments had to be backed up by statistical evidence. Most unit Flight Surgeons did not have the necessary training or facilities to do this and the quantity of adverse criticism was reduced considerably.¹¹ Another factor which undoubtedly was responsible for the fewer complaints concerning the diet was the gradual improvement of the ration toward the end of the war.

During the early days of the war no Nutrition officers were assigned to the Air Forces. Certain Medical Officers in the Headquarters Section of the Fifth Air Force were designated as Nutrition Officers. Nutrition Officers were assigned to major Air Force commands during the middle of 1943 and after that date many of the reports rendered by those officers contained frequent statistical evidence of deficiencies in the diet as

-
10. Letter Hq Fifth Air Force from the Nutrition Officer to the Food and Nutrition Officers, Sub: "Complaints Noted in Sanitary reports Concerning Food and Nutrition," 18 June 1943.
 11. Letter Hq FEAF from CG, FEAF to the Adjutant General, Sub: "Essential Technical Medical Data from Overseas Air Force," 1 March 1945, 1st Ind. (Annex p. 36).

issued at the Quartermaster Depot. 12,13,14,15,16 In considering these facts it should be remembered that the criticisms were based on the food that was planned to be issued at the Quartermaster Depots. (Photo 292). The value of the food actually accepted by the Mess Sergeants at the depot and prepared and eaten in the unit, was progressively lower in each instance. It can be seen from the reports of the Nutrition Officers that the diet issued was consistently below National Research Council standards in many essential nutrients. This was particularly true of calcium, Vitamins B₁, B₂, and G₁ and riboflavin. 16a,16b,16c

-
- 12. Statistics from the files of the Nutrition Officer, Fifth Air Force. Annex p. 538.
 - 13. 1st Indorsement Hq Fifth Air Force to Letter Hq AAF from the Commanding General AAF to the Commanding General Fifth Air Force, Sub: "Nutritional Adequacy of Diet," 19 February 1944. Annex p. 552.
 - 14. Letter Hq Thirteenth Air Force from the Commanding General to the Commanding General USASOS, Sub: "Class I and II Supply Difficulties," 16 December 1944. Annex p. 553.
 - 15. Report Hq Thirteenth Air Force From the Commanding General to the Commanding General FEAF, Sub: "Supplementary Nutrition Report, 23 November 1944." Annex page 556.
 - 16. Report Hq Thirteenth Air Force from the Commanding General to the Commanding General FEAF, Sub: "Nutrition Report," 23 December 1944. Annex p. 560.
 - 16a. "Minutes of Conference called to Review Present Ration Scale," 25 October 1943.
 - 16b. Report Hq FEAF from the Commanding General to the Commanding General USAFEE, Sub: "Essential Technical Data," 1 March 1945.
 - 16c. Report Hq Fifth Air Force from the Commanding General Fifth Air Force to the Commanding General FEAF, Sub: "Consolidated Nutrition Reports," 22 April 1945.

Flying personnel were authorized extra rations such as fruit juices and powdered milk which were not usually available to other troops. In order to insure that these rations were used exclusively by flying personnel it would have been necessary to operate a separate mess for this group. Also the issuing of better foods to a special group of individuals resulted in considerable discontent and lowering of morale among other members of the unit. As a result, the extra rations were usually divided among all members of the unit. It was felt by Medical Officers in the Air Forces that a nutritionally adequate diet was as important for ground personnel as it was for flying personnel. Ground personnel responsible for the maintenance of planes were required to remain in these theaters for considerable periods, during which time the effects of a nutritionally inadequate diet became progressively more evident. Flying personnel on the other hand were rotated in a relatively short period of time and clinical evidence of nutritional deficiencies were rarely apt to appear before their return to the United States.

Another factor beside the issuance of extra rations which improved the diet of Air Force units, particularly flying units, was the use of the so-called "Fat-Cat" airplane. Planes no longer suitable for combat use were employed by these units in flying to Australia where fresh meat, vegetables and fruit, and even milk, were obtained with squadron funds. This procedure proved to be very satisfactory and greatly improved the quality of the diet served in these

units. (Photo 290). However, at many bases after June 1944, units using this method of supply were required to turn over a large proportion, usually three-quarters, of the plane-load of perishables to the local quartermaster for distribution among all units at the base. The remainder was not of sufficient quantity and the distances involved were too great to warrant continuing this procedure and it was abandoned in late 1944.

FACTORS GOVERNING THE ACCEPTABILITY OF RATIONS BY AIR FORCE TROOPS:

All interested personnel was concerned about the nutritional inadequacies of the ration as issued. Even more concern was expressed over the fact that the balance of the food actually ingested by the individual was even lower. The reason for this situation lay in the fact that a great deal of the food served in messes was refused by Air Force personnel. Frequent attempts were made to impress troops with the importance of eating a balanced diet, yet it was evident that the average individual would not follow such advice when he did not care for the food that was served. The manner in which the food was prepared and served, the variety of the diet, and the distaste for individual items of the ration, were the most important factors in the acceptability of the food served to Air Force troops.

Preparation of Meals: The preparation of palatable meals was seriously hampered by the presence of many inadequately trained mess personnel, both commissioned and

enlisted.^{17,18,19} In addition there was a marked lack of interest and initiative on the part of the majority of personnel assigned to mess duties. (Photos 293 and 294). Though the Commanding Officers were responsible for the running of the mess, they often failed to assign individuals to this duty who were capable of handling this important position. Those officers designated as Mess Officers were frequently assigned to this position because they were not capable of performing other duties. Disrated flying personnel were frequently assigned the duty of Mess Officer. As a rule these officers had little interest in their duties and gave evidence of dislike of their work by half-hearted supervision of the personnel under them. Enlisted mess personnel were often received who had been inadequately trained and who lost most of their interest and initiative in preparing appetizing meals during their long tours of overseas duty. As a result unappetizing meals were prepared with a lack of variety in the recipes used, and served in an unappealing manner.^{19a} When forced to eat such meals in the open rather than

-
- 17. Air Evaluation Board, SWPA, Report on Luzon Campaign, Medical Section.
 - 18. Report Hq Fifth Air Force from the Commanding General to the Commanding General, USASOS, Sub: "Information on Adequacy and Acceptability of the Ration," 24 February 1943. Annex p. 531.
 - 19. Letter Hq Fifth Air Force from the Surgeon to the Commanding General Fifth Air Force, Sub: "Recommended Provisional Table of Organization for Mess Management Teams," 20 August 1943. Annex p. 544.
 - 19a. Report Hq Thirteenth Air Force from the Nutrition Officer to the Commanding General FEAF, Sub: "Nutrition Report," 6 October 1944. Annex p. 553.

from a table in a mess hall, there is little reason to wonder why appetites were often so poor. (Photo 295). It was not at all unusual to see personnel eating pilfered K-rations or PX candies in preference to the food served in the mess hall.²⁰

Lack of Variety: Frequently there was a marked lack of variety in the items of the ration issued by the Quartermaster. This apparently was due to the forced issue of certain items which were either overstocked or in danger of deteriorating. (Photos 296 and 297). Almost any type of food was eaten by personnel occasionally, but even the most palatable types of food, palled and became unacceptable when served with monotonous regularity day after day.^{21,22,23,24} This factor was felt to be responsible for the low Vitamin C levels so frequently noted, as lemon powder was the only source of Vitamin C and it was served daily, in some instances by directive. No other beverage fortified with Cevitanic acid was available in these theaters until

-
20. Letter Hq FEAF from CG, FEAF to the Adjutant General, Sub: "Essential Technical Medical Data from Overseas Air Force," 1 March 1945, 1st Ind. Annex page 36.
 21. Report Hq Fifth Air Force from the Commanding General to the Commanding General USASOS, Sub: "Information on Adequacy and Acceptability of the Ration," 24 February 1943. Annex p. 531.
 22. Report Hq ADVON, Fifth Air Force by the Nutrition Officer to the Surgeons all Units, Sub: "Ration as a Nutritional Problem to Air Force Surgeons," 6 October 1943. Annex p. 546.
 23. Report Hq Thirteenth Air Force from the Commanding General to the Commanding General FEAF, Sub: "Supplementary Nutrition Report, 23 November 1944." Annex p. 556.
 24. Report Hq Thirteenth Air Force from the Commanding General to the Commanding General FEAF, Sub: "Nutrition Report," 23 December 1944. Annex p. 560.

the end of the war.²⁵ In many instances shortages of staple items such as bread, coffee, sugar, and flour existed.^{26,27,28} As a result, the lack of variety in the ration was even more pronounced when undesirable substitutes for these staple items had to be served.

The Acceptability of Certain Items of the Ration: A number of items frequently supplied in the routine ration issued to Air Force troops were types of food that were disliked by the majority of personnel. Such foods were only partially consumed even when rarely served. (Photo 298). Experience in these theaters demonstrated the acceptability or non-acceptability of the following:²⁹

Most Acceptable

Fruits
Bread
Chicken and Turkey
Coffee
Beef and Gravy
Pork and Gravy
Canned Corn
Juices
Spaghetti and Meatballs
Beans
Hotcakes
Cereal
Vegetables
Soup
Milk (Evaporated and
Dehydrated)
Vienna Sausage
Cheese
Bacon
Pork Sausage
All Fresh Items

Least Acceptable

Wax-like Tropical Butter
(Issued During the
Early part of the War)
Spinach
Lemon Beverage
Lunch Meat (Span)
Beet Tops
Dehydrated Foods
Corned-Beef Hash
Salmon
Chili
Meat and Vegetable hash
Meat and Vegetable Stew
Dehydrated Eggs
Carrots
Dehydrated Potatoes
Bully-Beef

25. Report Hq Thirteenth Air Force from the Nutrition Officer to the Commanding General FEAF, Sub: "Nutrition Report," 6 October 1944.

26. Report Hq Thirteenth Air Force from the Commanding General to the Commanding General FEAF, Sub: "Supplementary Nutrition Report, 23 November 1944." Annex p. 556.

(Other Footnotes Continued on Next Page).

At one base in January 1944 during a survey of a unit chosen at random, it was found that such undesirable items comprised approximately 75 per cent of the meat component of the rations. Approximately 55 to 60 per cent of the issue was refused at the depot by the Mess Sergeant because the mess was already over-stocked with these items as a result of their unacceptability. It was further found that at least 50 per cent of that served in the mess hall was not accepted by the troops.³⁰ Thus only 15 per cent of these unacceptable items, which it was planned would be issued, was actually consumed by the troops. (Photo 298).³¹

-
27. (Continued from Preceding Page). Report Hq Thirteenth Air Force from the Nutrition Officer to the Commanding General FEAF, Sub: "Nutrition Report," 6 October 1944. Annex P. 558.
 28. (Continued from Preceding Page). Report Hq Thirteenth Air Force from the Commanding General to the Commanding General FEAF, Sub: "Nutrition Report," 23 December 1944. Annex p. 560.
 29. (Continued from Preceding Page). Report Hq Office of the Quartermaster General, Washington, D. C., Research and Development Branch, Planning Division, By Lt Col D.B. Dill, QMC, Sub: "Report on Observations in the Southwest Pacific and Pacific Ocean Areas, October - December 1944," Part VII, Field Ration "B".
 30. Report Hq Thirteenth Air Force from the Nutrition Officer to the Commanding General FEAF, Sub: "Nutrition Report," 6 February 1945.
 31. Report Hq Thirteenth Air Force from the Commanding General to the Commanding General FEAF, Sub: "Nutrition Report," 23 December 1944. Annex p. 560.

METHODS USED TO IMPROVE THE DIET AS SERVED:

Inasmuch as the Air Forces had no control over the source or issue of the ration, attempts were made by them to improve the palatability of the diet as it was served to personnel. Concentrated vitamins were requisitioned in an attempt to make up any existing deficiencies.^{32,33,34,35,36} These vitamins were not always available for issue and in some instances requisitions for them were disapproved because, as it was stated, the diet as planned for issue contained adequate quantities of all nutrients.

Nutrition Officers: During the latter part of 1943 cognizance of the above unsatisfactory mess situation resulted in the designation of Nutrition Officers in the Fifth Air Force who were to " work in close liaison with unit messes and local Quartermaster." They were" provided for key positions in the Fifth Air Force and also larger separate units to function as a member

-
- 32. Report Hq Fifth Air Force from the Commanding General to the Commanding General USASOS, Sub: "Information on Adequacy and Acceptability of the Ration," 24 February 1943. Annex p. 534.
 - 33. Extract from the Inspector General's Report to the Chief Flight Surgeon Fifth Air Force, 12 March 1943. Annex p. 540.
 - 34. Letter Hq ADVON Fifth Air Force from the Deputy Commander to the Commanding General Fifth Air Force, Sub: "Polyvitamins," 31 March 1944. Annex p. 550.
 - 35. 1st Indorsement Hq Fifth Air Force to Letter Hq AAF from the Commanding General AAF to the Commanding General Fifth Air Force, Sub: "Nutritional Adequacy of Diet," 19 February 1944. Annex p. 552.
 - 36. Report Hq Thirteenth Air Force from the Commanding General to the Commanding General FEAF, Sub: "Supplementary Nutrition Report, 23 November 1944." Annex p. 556.

of the command or unit surgeon's staff."³⁷ A few trained Nutrition Officers were assigned to this Air Force at this time but the majority were drawn from among the Medical Officers assigned to the Air Force. Theater directives later required the assignment of Nutrition Officers to all major commands,³⁸ They were to be given no other duties which might interfere with their primary assignment. In spite of the fact that these officers proved to be key factors in this important work, no position vacancies were created for them in any tables of Organization.³⁹

In the Thirteenth Air Force efforts were made in November 1943 to obtain five Nutrition Officers and thirteen enlisted assistants to insure proper mess inspection, supervision and management. Required qualifications and the desired assignments of this personnel were outlined at this time.⁴⁰ No action was taken on this request and the Thirteenth Air Force remained without Nutrition Officers until its assignment to the Far East Air Forces

37. Fifth Air Force Regulation 25-29, Sub: "Nutrition Officers," 13 January 1944.

38. FEAF Regulation 25-29, Sub: "Nutrition Officers," 6 July 1944. Annex p. 563.

39. Letter Hq Thirteenth Air Force from CG, Thirteenth Air Force to CG, FEAF, Sub: "Request for allotment of Grades," 24 February 1945 and Associated check Sheets in Files of FEAF, Annex page 63.

40. Letter Hq Thirteenth Air Force from CG, Thirteenth Air Force to CG, AAF, Sub: "Nutrition Officers," 14 November 1945. Annex p. 63.

in June 1944. At that time one of the Nutrition Officers of the Fifth Air Force was reassigned to the Thirteenth Air Force.

The Nutrition Officers played an important role in improving the food served in Air Force unit messes. It was felt, however, that even greater benefits would have been achieved had they been given recognition for their services by the authorization of adequate positions on existing Table of Organization.

Training and Supervision of Mess Personnel: In an effort to improve the preparation and serving of food in Air Force units, it was recommended by the Surgeon, Fifth Air Force, in August 1943, that a number of mess management teams be authorized and assigned to each of the commands.⁴¹ This recommendation was not approved and the project was abandoned. However, a Field Cooking and Baking School, requiring fewer personnel, was established in November 1943.^{42,43} A practical refresher

-
- 41. Letter Hq Fifth Air Force from the Surgeon to the Commanding General Fifth Air Force, Sub: "Recommended Provisional Table of Organization for Mess Management Teams," 20 August 1943. Annex p. 544.
 - 42. Memo 140 Advance Echelon, Fifth Air Force, 19 November 1943. Annex p. 67.
 - 43. Report Hq Fifth Air Force by the Nutrition Officer, D. I. Mackintosh, Capt, SnG, Sub: Field Cooks and Bakers School," Annex p. 570.

course of ten days duration was given to 16 cooks and bakers at a time. Personnel were ordered to attend this school on the recommendation of the unit Commanders and the Area Nutrition Officers. The school was centrally located and semi-permanent in character. Special emphasis was placed on: the proper preparation of items frequently issued in the ration such as dehydrated foods; variety in the recipes used; and methods of baking. At no time was any table of Organization and Equipment authorized for this unit and as a result its efficient operation was seriously threatened. For this reason and because of a lack of interest on the part of higher commands, the school ceased operating in early 1945 despite the fact that it had proved to be an excellent method of increasing the acceptability of the food served to Air Force troops.⁴⁴

In the Thirteenth Air Force, during late 1943 and early 1944, next personnel were sent to a cooking school which was operated by the Service of Supply. Following the assignment of this Air Force to the Far East Air Forces, no such training was available. An attempt was made to establish a Field Cooking and Baking School in October 1944.⁴⁵ However, because of the lack of personnel and the absence of any authorization for them, this project was abandoned. In April 1945 a Food Service.

44. Air Evaluation Board, SWPA, Report on Luzon Campaign, Medical Section.

45. Memo Hq Thirteenth Air Force from the Surgeon to the Commanding General Thirteenth Air Force, Sub: "Field Cooking and Baking School Similar to that of the Fifth Air Force," 6 October 1944. Annex p. 562.

Program was established and charged with the supervision of menus, mess management and mess training.⁴⁶ The Food Service Supervisor was first assigned to the Office of the Quartermaster of the XIII Air Force Service Command but was later reassigned to the Office of the Quartermaster, Thirteenth Air Force. This Officer worked in close conjunction with the Air Force Nutrition Officer. Under this program, commanders of groups, battalions and separate units were directed to appoint a Food Service Officer (MOS 4110) (Primary Duty) and a Food Service Mess Sergeant. In addition to the above, Commanding Officers were directed to appoint a Menu Planning Board to aid the Food Service Officer in the preparation of menus. This board was to consist of the Food Service Officer, the Quartermaster, a representative of the organization Surgeon, a representative of each subordinate units, and the Food Service Mess Sergeant. When possible the Food Service Officer was to submit proposed menus to the Menu Planning Board for consideration prior to each ration issue. The Quartermaster, Thirteenth Air Force, recommended that this program be further augmented by the addition of three more officers and three cooking teams of two men each, who were to be assigned to the Air Force Quartermaster, Section. The functions of these teams were to have been as follows:

46. Thirteenth Air Force Regulation 133-6 Sub: "Food Service Program," 27 April 1945. Annex p. 564.

"From past experiences the Air Force is divided into not more than three major locations. These three teams could be placed on temporary duty with the various commands and cover all units at the particular locations. Their functions would be to consult with local commanders, food service officer, surgeons and Quartermasters, help to organize refresher training programs for mess personnel and give on-the-job instruction to bakers and cooks. They would act in advisory capacity only and be especially alert for new ideas, recipes and improvements to pass on to other messes. Pre-flight, in-flight and post-flight meals for combat crews will be given special attention where applicable. Menu planning and supervision and elimination of wastage, especially as pertains to fresh meats and other perishables, will be another important function of these food service officers and teams."⁴⁷ However, because of ... "the lack of authorization by higher headquarters and provisions for personnel required for each such function," the entire program was rather limited.

MESS FACILITIES AND EQUIPMENT:

As in other activities in these theaters, the necessity for constant initiative and improvisation in the operation of a mess was apparent. (Photos 293a and 294). In many instances

47. Memo: Quartermaster, Thirteenth Air Force to Medical Officer, Air Evaluation Board, 2 August 1945. Annex P. 65.

interested personnel greatly improved the menus served to Air Force troops by such means. However, there were certain shortcomings in the equipment authorized the Air Force units for use in the preparation of food. The following statements made by an Inspecting officer from the Office of the Quartermaster General, Washington, D. C., sums up the most important items:

"The outstanding impressions made upon the observer in tropical theaters when he visits company kitchens and interviews mess sergeants are: The rusty state of kitchen utensils; and the dissatisfaction with iron pots and roasting pans; the dissatisfaction with the fire unit of the field range; the strong desire for company baking equipment and components; the urgent need for refrigeration.

** ** ** ** ** ** ** ** **

"The American Soldier is brilliant at improvisation.....

But when it comes to improvising a refrigeration unit, he is baffled. Give him company baking equipment and baking components and a refrigeration unit, and the soldier's lot will be rendered far more tolerable. We at home forget that the number of man-days in combat is very small in comparison with the number of man-days of boredom."⁴⁸

Other recommendations included the substitution of trays as kitchen equipment for the present mess gear and the addition of certain items of equipment such as table can openers, muffin

48. Report on Observations in the Southwest Pacific and Pacific Ocean Areas, October-December 1944, by Lt Col D.B. Dill, QMC, Part IV, Kitchen Equipment. Annex p. 568.

and pie tins, mixing bowls, flour sifter, baking pans, and boilers.

SPECIAL MEALS FOR AIRCREW PERSONNEL:

With the exception of pre-flight and in-flight meals, it was the consensus of Air Force Medical Officers in these theaters that there was nothing peculiar to the duties of aircrew personnel which necessitated the issue of special diets to this group, provided the regular diet contained adequate quantities of all essential nutrients. The only exception to this statement was the necessity for guaranteeing that aircrew personnel employed in after-dark activities were supplied with sufficient Vitamin A to insure optimum night vision.

Pre-Flight Meals: The main consideration in preparing pre-flight meals is the elimination of gas-forming foods, Gaseous distention is of particular importance in high altitude missions. The altitudes at which missions were usually flown in these theaters were not of sufficient magnitude to cause concern in this respect and little attention was directed in preparing non-gas-forming pre-flight meals. The main concern of personnel was provided with an adequate palatable meal prior to a mission.

In-Flight Meals: The main consideration to bear in mind in the preparation of in-flight meals is the provision of a palatable meal containing sufficient carbohydrates to prevent the onset of symptoms attributable to a low blood sugar. There Hypoglycemia reactions are evidenced by headaches, visual disturbances, mental confusion, occasional irrational acts, and other symptoms not conducive to the efficient operation of

aircraft. Blood sugar is more rapidly burned up during periods of emotional tension and long combat missions provided an excellent basis for the development of these symptoms.^{49,50}

During the early days of the war the Red Cross provided Flight kits to combat personnel going on missions. (Photo 300). These kits were composed primarily of various types of candy, cookies, and fruit juices. The majority of Aircrew personnel preferred this type of meal, supplemented with a palatable sandwich, to a full course dinner. On short missions of only four to six hours duration, most individuals did not care to bother with in-flight feeding.

During the last year and one-half of the war, when long-range missions were frequently flown by all types of aircraft, the problem of in-flight feeding became more pressing. Also at this time the Red Cross no longer provided the light kit. Meals wrapped in paper bags were found to be unpalatable as they rapidly dried out during the flight. Rubberized silk containers, which prevent this, imparted an unpleasant flavor to the contents. Various other containers such as sealed cans were tried with varying success. The in-flight meal devised by the AAF and made available late in the war did not prove to be as acceptable to combat crews in these theaters.⁵¹

49. Report Hq Thirteenth Fighter Command from the Surgeon to the Commanding General Thirteenth Air Force, Sub: "The Medical Aspects of Extended Fighter Missions, Enclosure to letter Hq Thirteenth Fighter Command from Commanding General Thirteenth Fighter Command to the Commanding General Thirteenth Air Force, Sub: "Tactics and techniques of Long Range Fighter Escort," 10 November 1944. Annex p. 156.

50. Report Hq Advanced Echelon 2d Central Medical Establishment from the Chief of the Research Section to the Commanding General, Thirteenth Air Force, Sub: "Investigation of the Prevention of Fatigue Among Fighter Pilots Engaged in Long Range Missions," 18 December 1944. Annex p. 152.

theaters.⁵¹ In almost all cases, 10-in-1 rations proved to be more preferable.⁵² However, because of the completeness of this ration, many items were not consumed and considerable waste resulted. The food cabinets designed by the AAF to make possible the provision of hot meals while in flight, did not arrive to these theaters in more than sample quantities prior to the end of the war. A feature which prevented combat crews from going hungry on return from missions was the serving of coffee and doughnuts by the Red Cross. (Photo 302).

-
51. Report: War Critique Study, Hq XIII Air Force Service Command, Vol. I, 1945, Annex p. 117.
52. Letter Hq Thirteenth Air Force from CG, Thirteenth Air Force to CG, AAF, Sub: "Nutrition Officers," 14 November 1945. Annex p. 63.

AIR EVALUATION BOARD

SWPA

MEDICAL TEAM

CHARLES G. MIXTER, JR.
Lieutenant Colonel, Medical Corps
0462680

PERSONS CONSULTED

<u>NAME</u>	<u>RANK</u>	<u>POSITION HELD</u>
Grant, D. H.	Maj Gen	The Air Surgeon, AAF
Carter, M.	Brig Gen	CG., 5th Troop Carrier Wing
Denit, G. B.	Brig Gen	Surgeon, USAFFE, and USASOS
Maxwell, E.	Brig Gen	Surgeon, USAFISPA, Surgeon Okinawa
McCoy, G.	Brig Gen	CG., XIII AFSC
Annons, F. E.	Col	Surgeon, VAFSC and FEASCO
Branlett, C. G.	Col	Personnel Officer, Officer of the Surgeon, USASOS
Cave, E. F.	Col	C.O., 105th General Hospital
Diets	Col	Quartermaster, FEAF
Eppinger, E.	Col	Medical Consultant, Office of the Surgeon, USASOS
Frese, F. J., Jr.	Col	Surgeon, Thirteenth Air Force
Gould, K. G.	Col	Surgeon, Thirteenth Air Force
Hazen, Jr.	Col	Surgeon, Sixth Army
Jenkins, R. T.	Col	Asst. Surgeon, Fifth Air Force and Asst.
Jensen, W.	Col	Surgeon, AFPOA
Ledfors, G.	Col	Surgeon, FEAXC
Musser, H. J., Jr.	Col	C.O., 135th Medical Group
Oughterson, A.	Col	Surgical Consultant, Office of the Surgeon, AFPAO
Porter, E.	Col	A-1, FEAF
Pieris, W. E.	Col	Quartermaster, Thirteenth Air Force.
Sands, H. J.	Col	C. O., 403rd Troop Carrier Group
Simpson, E. H.	Col	Surgeon, FEAF
Summers, D. H.	Col	Surgeon, Fifth Air Force and Asst. Surgeon, FEAF
Trimble, R.	Col	Surgical Consultant, Office of The Surgeon, USASOS
Ward, J.	Col	Surgeon, Guadalcanal Base Command
Wilson, B. J.	Col	Surgeon, Fifth Air Force
Younts, P.	Col	A-1, Thirteenth Air Force
Beavers, A. J.	Lt Col	Surgeon, ADVON Fifth Air Force and Surgeon, Fifth Air Force
Bernreuter, R. G.	Lt Col	Operations Analysis Section, Fifth Air Force and FEAF
Blades, J.	Lt Col	President, Central Medical Board, FEAF
Blount, R. H.	Lt Col	Surgeon, 54th Troop Carrier Wing
Carp, A. A.	Lt Col	Surgeon, 5th Air Force Bomber Command

<u>NAME</u>	<u>RANK</u>	<u>POSITION HELD</u>
Ching, S.	Lt Col	Personnel Officer, Office of the Surgeon, FEAF
Craig, W.	Lt Col	Surgeon, SWPA Branch of Pacific Division, ATC
Dougherty, J. E.	Lt Col	Statistical Officer, Office of the Surgeon FEAF
Gould, M.F.	Comdr.	Surgeon, First Marine Air Force
Gilmore, J. E.	Lt Col	Surgeon, 308th Bombardment Wing
Hall, J. B.	Lt Col	Surgeon, 1st Cavalry Division
Hall, J. B.	Lt Col	Surgeon, 5th Air Force Fighter Command
Hall, L.	Lt Col	Asst. Chief, Operations Analysis Section, FEAF
Hastings, D.L.	Lt Col	Consulting Psychiatrist, Office of the Air Surgeon, AAF
Harper, P.W.	Lt Col	Malariologist, SOPAC and Asst. Malariologist, AFPAC
Kolberer, C. F.	Lt Col	C.O., 5th Air Liaison Group
Mendel, C.L.	Lt Col	Surgeon, XIII Air Force Fighter Command
Mohle, F. V.	Lt Col	Surgeon, XIII Air Force Service Command
Murray, J. C.	Lt Col	Consulting Psychiatrist, Office of the Air Surgeon, AAF
Resch, J. C.	Lt Col	C.O., 2d Central Medical Establishment
Sapero	Comdr.	Malariologist, SOPAC
Sellards, H. E.	Lt Col	Surgeon, 85th Fighter and Surgeon, XIII Air Force Fighter Command
Smith, G. L.	Lt Col	Asst. Surgeon, Fifth Air Force
Smith, R. D.	Lt Col	Surgeon, 5th Air Force Fighter Command and Surgeon, Australian Rest Leave Area
Snyder, J. J.	Lt Col	Medical Inspector and Nutrition Officer, Fifth Air Force and FEAF
Taylor, J.	Lt Col	Evacuation Officer, Office of the Surgeon, USASOS
Walsh, M. W.	Lt Col	Consulting Psychiatrist, Thirteenth Air Force and C.O. 2d Central Medical Establishment
Warthin, T. H.	Lt Col	Surgeon, 5th Air Force Service Command
Withers, H. W.	Lt Col	Asst. Surgeon, Fifth Air Force and FEAF
Wolff, S.	Lt Col	Chief, Operations Analysis Section FEAF and Fifth Air Force
Wolfson	Lt Col	Acting Executive, 135th Medical Group
Ahlen, C. A.	Maj	Surgeon, 309th Bombardment Wing

<u>NAME</u>	<u>RANK</u>	<u>POSITION HELD</u>
Aurstin, C. M.	Maj	Surgeon, 43rd Bombardment, GP(I)
Ball, J. E.	Maj	Surgeon, 6th Service Group
Basmanian, A. W.	Maj	Surgeon, 49th Fighter Group
Blank, H. S.	Maj	Medical Officer, Air Evaluation Board, SWPA
Chapman, J.	Maj	Statistical Officer, Office of the Surgeon, Thirteenth Air Force and FLAF
Coffey, J. H.	Maj	Malariologist, Fifth Air Force
Corlett, J. C.	Maj	Surgeon, 11th Bombardment Group
Crane, J. E.	Maj	Surgeon, New Zealand Rest Leave Area
Cronenwett, P.	Maj	C.O. 801st Medical Air Evacuation Squadron
Crumay, H. M.	Maj	C.O. 804th Medical Air Evacuation Squadron and Evacuation Officer FEAF
Curry, J. C.	Maj	Surgeon, 5th Bombardment Group (H)
D'Alfoso, A. A.	Maj	Surgeon, XIII Air Force Fighter Command
Devin, S. B.	Maj	Personnel Officer, Office of the Surgeon, FEAF
Dolan, T. R.	Maj	Research Section, 2d Central Medical Establishment
Flaherty, T.	Lt Comdr.	Surgeon, Marine Air Group 25
Glasscock, M. R.	Maj	Surgeon, XIII AF Bomber Command
Gordon, T. R.	Maj	Chief, AACS, SOPAC
Haller, K. W.	Maj	Dental Officer, Thirteenth Air Force
Hanson, M. N.	Maj	Surgeon, XIII Air Force Bomber Command
Hammond, R. B.	Maj	Asst. Surgeon, CRTG
Hauge, E. T.	Maj	Surgeon, IV Air Service Area Command
Hetzel, C. C.	Maj	Surgeon, 42d Bombardment Group (m) and President, Central Medical Board
Hughes, P. K.	Maj	Surgeon, 307th Bombardment Command
Kirby, C. W.	Maj	Surgeon, XIII Air Force Service Command
Leschausse, M.	Maj	Office of the Surgeon, Thirteenth Air Force
Lewis, L.	Maj	Surgeon, 307th Bombardment Group (H)
Long	Maj	Asst. Malariologist, SOPAC
Maxwell, R.	Maj	Surgeon in Charge of Australian and New Zealand Rest Leave Areas and Medical Inspector, Thirteenth Air Force

<u>NAME</u>	<u>RANK</u>	<u>POSITION HELD</u>
Meisenbach, A.	Maj	Surgeon, 4th Photo Group
Melanson, J.	Maj	Asst. Surgeon, XIII Air Force Bomber Command
Messenger, H. M.	Maj	Research Section, 2d Central Medical Establishment and Surgeon V Air Service Area Command
Molomut, N.	Maj	Personal Equipment Officer, FEAF
Murfee, J. A.	Maj	Surgeon, 38th Bombardment Group
Murphy, W. S.	Maj	Asst. Surgeon, V Air Force Service Command
Petus	Maj	Surgeon, 3d Attack Group
Phillips, J. E.	Maj	Surgeon, 18th Fighter Group and Surgeon, XIII Air Force Fighter Command
Piccolo, P.	Maj	Surgeon, 147th Fighter Group and Surgeon, XIII Air Force Fighter Command
Pratt, P. F.	Maj	Asst. Surgeon, 308th Bombardment Wing
Reisman, S. G.	Maj	Surgeon in Charge of New Zealand Rest Leave Area
Ruggiers, W. F.	Maj	C.O. 29th Portable Surgical Hospital
Smith, E.	Maj	Surgeon, XIII Air Force Bomber Command and Chief Research Section, 2nd Central Medical Establishment
Smith, K. P.	Maj	Surgeon, 29th Service Group and Surgeon, XIII Air Force Service Command
Smith, W.	Maj	C.O., 801st Medical Air Evacuation Squadron and Surgeon, XIII Air Force.
Snyder, L. C.	Maj	Co. 804th Medical Air Evacuation Squadron
Tollefson, H. R.	Maj	Surgeon, 403d Troop Carrier Group
Voldeng, K. E.	Maj	Officer in Charge, AF Convalescent Training Program, 51st General Hospital
Wagner, C.	Maj	Surgeon, 42d Bombardment Group
Wideman, G. P.	Maj	C.O., 820th Medical Air Evacuation Squadron
Wilcox, D. A.	Maj	Asst. Surgeon, FEASC
Wittman, M.	Maj	Officer in charge, AAFC Convalescent Training Program, 51st General Hospital
Aneter, R. K.	Capt	801st Medical Air Evacuation Squadron
Boileau, T. I.	Capt	804th Medical Air Evacuation Squadron
Carruthers, O.	Capt	Medical Administrative Officer, Office of the Surgeon, Thirteenth Air Force

<u>NAME</u>	<u>RANK</u>	<u>POSITION HELD</u>
Claggett, C.O.	Capt	Nutrition Officer, Fifth Air Force
Conway, E.	Capt	Asst. Officer in Charge New Zealand Rest Leave Area
Deitrick, C. A.	Capt	Medical Administrative Officer, Office of the Surgeon, V Air Force Service Command
Evans, D.	Capt	Psychiatrist, 2d Central Medical Establishment
Gorski, A. F.	Capt	Dental Officer, Fifth Air Force
Groth, H. N.	Capt	Surgeon, 307th Bombardment Group (H)
Henry, W. V.	Capt	Malarialogist, Thirteenth Air Force
Kerr, M. L.	Capt.	Chief Nurse, 804th Medical Air Evacuation Squadron
McGonnel	Capt	Nutrition Officer, Thirteenth Air Force
McGonagle	1st Lt	Medical Administrative Officer, 801st Medical Air Evacuation Squadron
Paige, C. A.	Capt	Medical Administrative Officer, 2d Central Medical Establishment
Richardson, E. H.	Capt	Venereal Disease Control Officer, AFWESPAC
Ritchie, M.	1st Lt	Chief, Nurse, 801st Medical Air Evacuation Squadron
Ronch, E. H.	Capt	C.O., 13th Medical Supply Platoon (AVN)
Townsend, E. C.	Capt	Evacuation Officer, 135th Medical Group
Turpin, D. J.	Capt	Sanitary Officer, Fifth Air Force
Widermann	Capt	Medical Administrative Officer, Office of the Surgeon, Thirteenth Air Force
Wilson, L.	Capt	Chief Nurse, 801st Medical Air Evacuation Squadron

Date Due

20 AUG 1987
JUL 07 1994

U.I.L



PRINTED IN U. S. A.

ARMED FORCES MEDICAL LIBRARY



B00K0000003478

3478

Office of The Surgeon General
U.S.A.

